

**ECONOMIC OPPORTUNITIES FOR AGRICULTURE,
FORESTRY COMMUNITIES, AND OTHERS IN RE-
DUCING GLOBAL WARMING POLLUTION**

HEARING
BEFORE THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDRED ELEVENTH CONGRESS
FIRST SESSION

JULY 14, 2009

Printed for the use of the Committee on Environment and Public Works



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ONE HUNDRED ELEVENTH CONGRESS
FIRST SESSION

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ECONOMIC OPPORTUNITIES FOR AGRICULTURE, FORESTRY COMMUNITIES, AND OTHERS IN REDUCING GLOBAL WARMING POLLUTION

TUESDAY, JULY 14, 2009

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The full committee met, pursuant to notice, at 10 a.m. in room 406, Dirksen Senate Office Building, Hon. Barbara Boxer (chairman of the full committee) presiding.

Present: Senators Boxer, Inhofe, Alexander, Barrasso, Bond, Cardin, Crapo, Gillibrand, Merkley, Sanders, and Udall.

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. Our hearing will come to order. I want to welcome everyone on the panel. We will be addressing opportunities for businesses and sectors like ag and forestry in the fight against global warming. Each member can have 4 minutes to open.

This is the first of three hearings scheduled for this week to address vital aspects of our plan for legislation that will avoid the ravages of unchecked global warming, create clean energy jobs here in America, and reduce our dependence on foreign oil.

Agricultural and forestry businesses have opportunities to play an important role in efforts to reduce global warming. Changes in land use, reforestation and other activities can make significant reductions in global warming pollution. As an example, a farmer can capture the methane that is emitted by waste ponds or change to no-till or low-till land management or take other steps to increase the amount of carbon absorbed in soils and forests. Then that farmer can sell those documented reductions in emissions as an offset on an open market where it can be purchased.

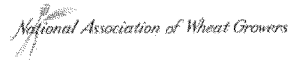
The farmer is paid, and the regulated entity receives credit toward cutting its global warming pollution. By providing regulated industries with a low-cost way to meet some of their pollution reduction requirements, offsets can be an important part of cutting our global warming emissions, and lowered costs for industry mean lower costs for family as we transition to a clean energy economy.

Groups working in the farm sector have voiced their support for Waxman-Markey legislation, including the National Association of Wheat Growers, the American Farmland Trust, and the National

Farmers Union, and I ask unanimous consent that their letters be placed in the record.

[The referenced documents follow.]

Climate Change Bill Clears House After Ag Deal Struck « National As... <http://www.wheatworld.org/2009/06/climate-change-bill-clears-house..>



Climate Change Bill Clears House After Ag Deal Struck

June 25, 2009

The House of Representatives approved controversial climate change legislation, known formally as the American Clean Energy Security Act (ACES), late Friday by a 219 to 212 vote.

The vote followed a week of extensive negotiation, primarily on the part of House Agriculture Committee Chairman Collin Peterson (D-Minn.), who worked with House Energy and Commerce Committee Chairman Henry Waxman (D-Calif.) and House Leadership to add a workable agriculture piece to the underlying Waxman-Markey bill, approved by the Energy and Commerce Committee in May.

Legislative language for the agriculture provisions was available early Thursday morning. Late in the day, NAWG released a statement on the bill from President Karl Sorrento, a wheat producer from Kinzua, Pa., reading:

"NAWG policy supports climate change legislation allowing agricultural greenhouse gas efforts to be utilized as an unlimited source of greenhouse gas credits and offsets, and we have signed onto nine industry principles for pending legislation. H.R. 2454 with changes as negotiated by House Agriculture Committee Chairman Collin Peterson will contain language effectively adhering to the former and satisfying nearly all of the latter. In fact, the changes Chairman Peterson negotiated also address additional concerns about regional flexibility, biomass production and indirect land use calculations.

"Therefore, NAWG supports the passage of H.R. 2454 with the Peterson amendment.

"We acknowledge the inevitability of greenhouse gas regulation – whether that comes through legislation produced by Congress or rules issued by the Environmental Protection Agency under authority given by the Supreme Court.

"Members of NAWG's staff and leadership have worked for a number of years to ensure that agriculture has a place in any climate change legislation and that producers are able to reap potential benefits rather than just accept onerous costs.

"This is not perfect legislation, but legislation rarely is. We are deeply grateful for Chairman Peterson's involvement in this process and appreciate the continued willingness of House Leadership to address the concerns of the agriculture community. We look forward to working with Senators in a similar manner."

Work now shifts to the Senate process. Senate Environment and Public Works Committee Chairwoman Barbara Boxer (D-Calif.) has tentatively scheduled consideration of the bill by her Committee for late July, and floor consideration is anticipated sometime this fall.

Even before the House vote, agriculture groups wrote leaders of the Senate's Committee on Agriculture, Nutrition and Forestry asking that they schedule a "series of hearings" to examine in depth how the ag offset provisions would function and the effects of the complete bill on the industry.

Legislative text of the agriculture portion is available online at <http://agriculture.house.gov/index.shtml>.

More on NAWG's climate change positions can be found at www.wheatworld.org/newsroom/climatechange.

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Press Releases

American Farmland Trust Excited About Waxman-Peterson Deal to Move Climate Change Legislation

CONTACT:

 Jennifer Morrill: 301-792-6238 (cell), jmorrill@farmland.org

Washington, D.C., June 24, 2009 —“Last night’s deal between Chairman Collin Peterson (D-MN) and Chairman Henry Waxman (D-CA) appears to address many of the outstanding issues that we have been concerned about and thus ensure farmers and ranchers can help reduce greenhouse gas emissions,” says Jimmy Daukas, Managing Director of AFT’s Agriculture & Environment Campaign. “American Farmland Trust believes that by maximizing agriculture’s opportunities, you maximize the bill’s environmental benefits. We are eager to continue working with agriculture organizations and Congressional staff to move climate legislation through the House and we have already begun the process of engagement to maximize agriculture’s role as the bill moves to the Senate.”

“Carbon sequestration projects on agricultural lands are the easiest, most readily available, and cost-efficient means of reducing greenhouse gas emissions on a meaningful scale. So it is critical that the legislation ensures U.S. agriculture can, on a widely accessible scale, help reduce greenhouse gas emissions by adopting new practices and technologies and by producing low-carbon renewable energy,” adds Daukas.

-30-

American Farmland Trust is a national nonprofit organization working with communities and individuals to protect the land, plan for agriculture and keep the land healthy. As the nation’s leading advocate for farm and ranch land conservation, AFT has ensured that more than a million acres stays bountiful and productive. AFT’s national office is located in Washington, D.C. The phone number is 202-331-7300.

National Farmers Union

[Newsroom](#) › NFU Statement: House Passes Climate Change Legislation

NFU Statement: House Passes Climate Change Legislation

For Immediate Release: June 26, 2009

Contact: 202-554-1600

[Click Here for Audio Clip](#)

WASHINGTON (June 26, 2009) – National Farmers Union President Roger Johnson commended the U.S. House of Representatives today for passing the American Clean Energy and Security Act of 2009 by a vote of 219-212.

"This legislation recognizes the unique role America's family farmers and ranchers can play when it comes to combating global climate change. The agricultural offset program, overseen by USDA, will help mitigate the increased input costs of a cap and trade program, while the early actors provision recognizes those producers who have already adopted environmentally-friendly practices.

"Failing to pass climate change legislation is not an option. The EPA is poised to act, with the agency's proposed endangerment finding paving the way for a regulatory approach to addressing greenhouse gases. If this were to occur, the positive provisions within climate change legislation would be lost.

"I commend the House leadership for their tireless efforts to include agriculture as part of the climate change solution. Agriculture Committee Chairman Peterson, Speaker Pelosi, Majority Leader Hoyer and Energy and Commerce Committee Chairman Henry Waxman were instrumental to the passage of the bill.

"While not perfect, the House-passed bill is a step in the right direction. I look forward to working with the Senate as they begin considering climate change legislation."

-30-

This entry was posted on Friday, June 26th, 2009 at 6:20 pm and is filed under [Agriculture](#), [Energy](#), [Environment](#). You can follow any responses to this entry through the [RSS 2.0](#) feed.

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Senator BOXER. At the same time, it is essential that offsets in fact reduce emissions and that they can be monitored and verified. Making sure that offsets have integrity so that our clean energy jobs bill reduces pollution as it is designed to do is an important part of the work of this committee.

I want to thank all of our witnesses for being here today to address this important subject. I think this is a very exciting opportunity out there posed in the form of a challenge. And I look ahead and I see if we do this right, I see new jobs. I see new opportunities for agriculture and forestry. And I believe if we do the right thing, we will not only meet the challenge of global warming and avoid the ravages of global warming, which have been laid out by the Bush administration and now the Obama administration, but will create millions and millions of jobs.

The last point on that, in my home State of California, where we are taking the lead on this, the only real growth sector in the last 10 years has been alternative energy, 125,000 new jobs and 1,000 new solar companies. So we can prove the fact that even in this very tough recession, that is the bright spot in my home State. So I look forward to hearing the testimony today.

At this time, I call on Senator Inhofe.

**OPENING STATEMENT OF HON. JAMES M. INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA**

Senator INHOFE. Thank you, Madam Chairman.

Let's face it, as anyone familiar with agriculture knows, farming is energy-intensive business, so when the price of diesel, electricity or natural gas goes up, farmers know about it, and they don't like it, and they tell us about it.

Farming is a business of high costs and low profit margins, so it is not surprising that a significant portion of the agriculture community opposes cap-and-trade, the purpose of which is to raise prices on the energy that farmers use.

Now, if cap-and-trade achieved its intended effect, that is, to prevent the global climate catastrophe, then farmers would be the first to sign up to help. In my view, the farmers are practical people. When they see a problem, they want to fix it, and case closed.

But if you are asking them to assume an enormous economic burden for a meaningless exercise, one that subsidizes big cities at the expense of the heartland; one that sends American jobs and taxpayers to India and China; one that puts American farmers at the disadvantage in the global marketplace, all for no impact whatsoever on global warming, then you will get an earful.

What do I mean here? Well, the EPA Administrator, Lisa Jackson, stated to this committee just last week, if the U.S. chooses to enact cap-and-trade unilaterally without China, India and other developing nations which emit a significant portion of the world's greenhouse gases, then farmers will be forced to pay for a solution that doesn't work. Farmers understand what this means. It is all pain and no climate gain.

Now, one thing I will note about farmers: they are great stewards of the land. Farmers have partnered with the Federal Government to improve and protect thousands of acres of agricultural land. But they are rightly leery of cap-and-trade because they sup-

pose the environmental benefits its supporters claim it will create are illusory.

Farmers are also skeptical of cap-and-trade's alleged economic benefits. Over the last several months, cap-and-traders—in a desperate attempt to reverse the inexorable decline in public support for the Waxman-Markey bill—have claimed cap-and-trade will create economic opportunities for farmers. They say that farmers can make hefty profits by taking advantage of so-called offsets. These projects allow farmers to undertake certain agricultural practices such as no-till farming to keep CO₂ in the ground and to get paid for it. But as farmers have discovered, these projects won't defray the increased energy costs and the devastating impacts caused by cap-and-trade.

According to the Heritage Foundation, farm income would drop \$8 billion under cap-and-trade, and offsets would make up less than 10 percent of the lost income. And many of the farmers, like fruit, vegetable, rice and cotton farmers, won't be able to participate in an offset program because their crops are simply not suitable for no-till or other practices to sequester CO₂ in the soil. They will simply be stuck with significantly higher energy costs.

Also, consider a report by the Congressional Research Service which recently confirmed that new EPA estimates of the potential for agricultural soil sequestration and no-till and other practices are significantly lower than the EPA 2005 estimates. In plain English, this means that the most viable tool for producing offsets with soil sequestration won't be available for farmers in the amounts promised.

This is not just a small adjustment. This was a major change by about 10-fold. I learned a good deal of this in letters sent by 120 agriculture groups opposing the House Waxman-Markey bill. This opposition, I should note, runs the gamut of agricultural sector, including the Farm Bureau, the American Farm Bureau, the Pork Producers Council, the U.S. Rice Federation, the National Cattlemen's and Beef Association, the National Chicken Council, the Council for Farmer Cooperatives, the American Meat Institute, and the North American Millers Association. And I ask that all these be made a part of the record.

Senator BOXER. Without objection.

[The referenced letters follow:]

Agriculture Groups Opposed to Waxman-Markey – as of June 26, 2009

1. Agribusiness Association of Iowa
2. Agricultural Retailers Association
3. Agrium Inc.
4. Alabama Farmers Federation
5. American Agri-Women
6. American Farm Bureau Association
7. American Farmers & Ranchers
8. American Feed Industry Association
9. American Frozen Food Institute
10. American Meat Institute
11. American Plant Food Corporation
12. AmeriFlax
13. Associated Industries of Florida
14. Beck's Superior Hybrids
15. Brandt Consolidated
16. CF Industries
17. Chemical Industry Council of Illinois
18. CHS Inc.
19. Corn Producers Association of Texas
20. D.B. Western, Inc.
21. Far West Agribusiness Association
22. Florida Chamber of Commerce
23. Florida Farm Bureau Federation
24. Florida Fertilizer & Agrichemical Association
25. Florida Strawberry Growers Association
26. Food Industry Environmental Council
27. GROWMARK
28. Hardee County Farm Bureau (FL)
29. Hillsborough County Farm Bureau (FL)
30. Illinois Farm Bureau
31. Illinois Fertilizer & Chemical Association
32. Indiana Beef Cattle Association
33. Indiana Farm Bureau
34. Indiana Grain & Feed Association
35. Indiana Office of Energy Development
36. Indiana Plant Food & Ag Chemicals Association
37. Indiana Pork Producers Association
38. Indiana Professional Dairy Producers
39. Indiana State Department of Agriculture
40. Indiana State Poultry Association
41. Institute for Shortening and Edible Oils
42. International Raw Materials, Ltd.
43. J.R. Simplot Company
44. Kansas Agribusiness Retailers Association
45. Kansas Grain and Feed Association
46. Minnesota Agri-Growth Council
47. Minnesota Corn Growers Association
48. Minnesota Crop Production Retailers
49. Missouri Agribusiness Association
50. Missouri Farm Bureau
51. Montana Agricultural Business Association
52. National Cattlemen's Beef Association
53. National Chicken Council
54. National Grain and Feed Association
55. National Grange
56. National Meat Association
57. National Oilseed Processors Association
58. National Pork Producers Council
59. National Turkey Federation
60. NCRA
61. Nebraska Agri-Business Association
62. Nebraska Farm Bureau
63. New Mexico Peanut Growers Association
64. North American Millers Association
65. North Carolina Peanut Growers Association
66. North Dakota Agricultural Association
67. North Dakota Barley Council
68. North Dakota Farm Bureau
69. North Dakota Grain Dealers Association
70. North Dakota Grain Growers Association
71. North Dakota Soybean Growers Association
72. North Dakota Stockmen's Association
73. North Dakota Wheat Commission ✓
74. Northern Canola Growers Association
75. Northern Pulse Growers Association
76. Ohio Corn Growers Association
77. Ohio Farm Bureau
78. Ohio Poultry Association
79. Ohio Rural Electric Cooperatives, Inc.
80. Ohio Wheat Growers Association
81. Oklahoma Ag Retailers Association
82. Oklahoma Grain & Feed Association
83. Oklahoma Peanut Commission
84. Oklahoma Seed Trade Association
85. Oklahoma Wheat Growers Association ✓
86. Panhandle Peanut Growers Association
87. Peace River Valley Citrus Growers Association
88. Peanut Growers Cooperative Marketing Association
89. Polk County Farm Bureau (FL)
90. PotashCorp
91. Rocky Mountain Agribusiness Association
92. Sarasota County Farm Bureau (FL)
93. Society of American Florists
94. South Carolina Fertilizer & Agrichemicals Association
95. South Carolina Peanut Growers Association
96. South Dakota Agri-Business Association
97. South Dakota Farm Bureau
98. South Dakota Grain & Feed Association
99. Southern Crop Production Association
100. Southwest Council of Agribusiness
101. Terra Industries Inc.
102. Texas Agricultural Cooperative Council
103. Texas Cattle Feeders Association
104. Texas Farm Bureau
105. Texas Grain & Feed Association
106. Texas Peanut Producers Board
107. Texas Sheep & Goat Raisers Association
108. Texas Wheat Producers Association ✓
109. The Andersons, Inc.
110. The Fertilizer Institute
111. The McGregor Company
112. Todd Staples, Commissioner, Texas Department of Agriculture
113. Tom Farms (Kip Tom, CEO)
114. United Egg Producers
115. USA Rice Federation
116. Virginia Peanut Growers Association
117. W.B. Johnston Grain Co.
118. Western Peanut Growers Association
119. Western Plant Health Association
120. Wyoming Stock Growers Association

To all members of the House of Representatives

Dear Representative:

Tomorrow, the House will take up H.R. 2454, a proposal to mandate sweeping changes in our nation's energy and environmental policies. American Farm Bureau strongly opposes this bill and urges all members to vote "No" on final passage.

Congress is on the threshold of debating a program that will unquestionably impose enormous costs on the American economy, including agriculture. Economic analysis by Farm Bureau shows that – at a minimum – net farm income will decline by \$5 billion annually by the year 2020. But that is under the most optimistic set of assumptions. Those estimates do not begin to tell the story of what will happen when the program mandated by this legislation fully takes hold. Without an energy plan to replace our dependence on coal and other fossil fuels, without an international agreement that prevents other nations siphoning off our nation's wealth and productivity, without some way of knowing that these huge costs will actually result in real, quantifiable benefits, this legislation puts long-term constraints on the United States economy that hinder our growth. It should be rejected by the House of Representatives, and we urge all members in the strongest terms to vote "No" on final passage.

Peterson Amendment

Over the last several weeks, Chairman Collin Peterson (D-Minn.) of the Agriculture Committee has worked tirelessly to modify the legislation so that it incorporates provisions that are critical to American agriculture. The Peterson amendment establishes an agricultural offset program within the U.S. Department of Agriculture; provides for a list of eligible agricultural offsets; corrects the misuse of indirect land use calculations in evaluating the use of biofuels; and alters the definition of biomass. Farm Bureau wholeheartedly endorses and supports the Peterson amendment. We urge all members to vote "Yes" on this amendment when it is offered.

H.R. 2454 may be the most important legislation considered in the 111th Congress. It is critical that legislation not be approved that will harm agriculture, harm our economy and reduce economic opportunity for our children – all in the name of computer-driven scenarios, the science of which is increasingly brought into question.

We urge all members to vote "Yes" on the Peterson amendment and reject H.R. 2454.

Sincerely,

Bob Stallman
President

V:\stm\climate-vote09.0625

Statement by the USA Rice Federation on H.R. 2454, The American Clean Energy and Security Act of 2009, June 26, 2009

We appreciate the significant efforts of Chairman Peterson to make improvements on behalf of the agriculture sector to H.R.2454, the American Clean Energy and Security Act of 2009. These changes include ensuring agriculture's exemption under the greenhouse gas emissions cap, improving the opportunity for some agriculture sectors to participate in a cap and trade program by authorizing USDA to develop and administer the agricultural offsets component, addressing the indirect land use provision, and providing greater equity to rural electric customers relative to other electricity consumers.

In spite of these improvements, the USA Rice Federation has grave concerns about the impacts this legislation would have on the entire U.S. rice industry, from the farmers to the processors and marketers. This legislation would threaten the economic viability of our multi-billion dollar industry, the thousands of jobs it creates in rural areas, and the ability of the industry to continue to provide the millions of acres of wetland habitat for waterfowl and hundreds of wetland-dependant species.

Rice production is a very energy intensive industry from the field through the processing stages. With the U.S. proposing to impose climate change provisions on our industries unilaterally, we put ourselves in a competitive disadvantage with much of the world, including countries that are substantial global competitors of the U.S. rice industry.

Our industry cannot support legislation that would have the sole effect of driving up our production and processing costs resulting in a competitive disadvantage while providing little, if any, opportunity to make up for the added costs by participating in an agriculture offset program. Therefore, on behalf of the U.S. rice industry, we ask that you oppose H.R. 2454 when it comes before the House for a vote.

We thank the many Members of Congress who have taken positions on this legislation out of a deep concern for the economic viability of American agriculture and for its competitiveness in what is already a very lopsided global playing field.

The USA Rice Federation is the global advocate for all segments of the U.S. rice industry with a mission to promote and protect the interests of producers, millers, merchants, and allied businesses.

NPPC Statement On Compromise Climate Change Legislation

“With U.S. pork producers suffering record losses, the National Pork Producers Council cannot support climate change legislation even with the compromise language agreed to late Wednesday.

“NPPC is grateful to Chairmen Peterson and Waxman for reaching a compromise on language related to the agricultural greenhouse gas offset credits. Although NPPC supports the Peterson amendment – and urges lawmakers to vote for it when it comes up during floor consideration – the organization remains concerned about the overall cost to U.S. pork producers of the climate change bill.

“NPPC anticipates significant increases in energy prices and in pork production costs under the House climate change bill. The hikes would be overwhelming to pork producers, who for the past 21 months have been losing an average of \$22 per hog. From April 24 to June 19, and due mostly to the H1N1 flu crisis, the U.S. pork industry lost \$352 million, or about \$8.8 million per production day; for the remainder of 2009, producers are expected to lose an average of \$9.82 per hog.

“Many pork producers now are at risk of being put out of business, and passage of this climate change bill would only make that risk greater and put more producers in jeopardy.

“While the compromise language would allow the U.S. Department of Agriculture rather than the U.S. Environmental Protection Agency to design and implement the agricultural greenhouse gas offset credits program and to develop any climate change regulations affecting livestock producers – a provision supported by NPPC – the organization doesn’t believe that revenues from the sale of offset credits for the majority of pork producers would counterbalance the energy and input cost increases associated with bill.”

###

NPPC is the global voice for the U.S. pork industry, protecting the livelihoods of America’s 67,000 pork producers, who abide by ethical principles in caring for their animals, in protecting the environment and public health and in providing safe, wholesome, nutritious pork products to consumers worldwide. For more information, visit www.nppc.org.

June 25, 2009

The Honorable Nancy Pelosi
Speaker
United States House of Representatives
Washington, D.C. 20515

The Honorable John Boehner
Minority Leader
United States House of Representatives
Washington, D.C. 20515

Dear Speaker Pelosi and Minority Leader Boehner:

As a coalition of food, feed, and beverage processors, manufacturers, distributors, and retailers, we are writing to provide our perspectives on comprehensive climate change legislation that has emerged from the Energy and Commerce Committee, and how such legislation may impact our ability to place safe, abundant, and affordable food on the tables of all Americans. Collectively, we represent the chain of food suppliers that ensures Americans have access to healthy, safe, and reasonably-priced food products necessary for everyday life.

Climate change legislation will have significant direct *and* indirect impacts on the nation's supply chain of food and beverage providers, and, in turn, profound impacts on the food security of our nation. These are paramount considerations that Congress must consider and prioritize among the issues it is addressing. Legislative approaches must be carefully crafted not only to reduce greenhouse gas (GHG) emissions, but also to avoid adverse impacts on food prices and food accessibility.

While food, feed, and beverage producers account for 1.21% of the nation's direct GHG emissions, (*Carbon Risks and Opportunities in the S&P 500* at 12), we will be more affected by cap-and-trade legislation than this suggests. All members of the food supply chain are disproportionately vulnerable to indirect costs passed through by suppliers. When considering the total GHG emissions from each sector, including suppliers, the food, feed, and beverage sector has the fourth largest exposure to carbon costs—more than the chemical, retail, basic resources, and automobile and parts sectors (*Carbon Risks and Opportunities in the S&P 500* at 13). The food, feed, and beverage sector is also exposed to significant trade pressure. Yet, to date, Congress has not accounted for these disproportionate impacts on a sector that provides indispensable goods to American families.

We believe that cap-and-trade will work best if allowances are distributed proportionately to each industry's emissions, thereby mitigating the direct and indirect impacts on all regulated industries. Such a proportionate allocation would be the fairest system, because it would avoid arbitrarily picking winners and assist all industries making the challenging transition to a low-carbon economy. A fair distribution of allowances would allocate an appropriate percentage of allowances to the food, feed, and beverage sector. It would also avoid the impression that the allowances represent subsidies to favored industries—an accusation that could subject the United

States to World Trade Organization disputes and American companies to retaliatory tariffs. We cannot demonstrate international leadership by approving greenhouse gas legislation that undermines our international credibility on trade liberalization.

H.R. 2454 appears to pursue a plan of offering transition assistance to ensure a stable and affordable supply of necessities to American consumers—offering allowances to control price increases in electricity, natural gas, and home heating oil, and auctioning allowances to fund further assistance to lower income households. While we agree with developing a program that will help to offset increases in energy costs, the same consideration should be given to another indispensable necessity: food. The impact of rising domestic food prices will fall most heavily on the poorest 20 percent of Americans who spend roughly one-third of their after-tax income on food.

In addition to pressing for the equitable distribution of allowances, we intend to discuss other issues with H.R. 2454, including the inappropriateness of Clean Air Act regulatory authority for numerous facilities that emit less than 25,000 tons of CO₂e per year; limitations on opportunities for offset projects; and tax and trade ramifications.

We respectfully request that Congress more thoroughly address the above concerns. Unfortunately, H.R. 2454 in its current form fails to resolve these issues. Without these corrections, we respectfully ask that Members not support passage at this time. We look forward to working earnestly with Congress on climate change approaches that balance greenhouse gas reductions with the necessity of an abundant and affordable food supply.

Sincerely,

American Feed Industry Association

American Meat Institute

National Chicken Council

National Council of Farmer Cooperatives

National Grain and Feed Association

National Meat Association

National Oilseed Processors Association

National Turkey Federation

North American Millers Association



NATIONAL CATTLEMEN'S BEEF ASSOCIATION

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June 25, 2009

The Honorable Collin C. Peterson
Chairman
House Committee on Agriculture
1301 Longworth House Office Building
Washington, DC 20515

The Honorable Frank D. Lucas
Ranking Member
House Committee on Agriculture
1305 Longworth House Office Building
Washington, DC 20515

Dear Chairman Peterson and Ranking Member Lucas:

The National Cattlemen's Beef Association (NCBA) appreciates very much all the work that you and your staff did to improve the "American Clean Energy and Security Act of 2009" for agriculture. NCBA supports the package of amendments that you plan to offer on the House floor since it will go far toward making offset participation a reality for many agriculture producers, and will provide other benefits. We commend you for these efforts.

Nevertheless, despite these improvements, we continue to have significant concerns with the legislation. NCBA members are responsible environmental stewards who respect and care for the land, air, water, and animals that are fundamental to sustaining our way of life. Our members remain very concerned, however, about the effects the overall climate bill could have on their costs of fuel, electricity, feed, fertilizer, equipment, and other inputs necessary to maintain a cattle operation, as well as the costs of potential future regulation. Economists have estimated that the climate change bill would cause farm income to drop anywhere from \$8 billion in the short term to \$50 billion long term. The cattle industry has suffered significant economic setbacks lately, and if these estimates are close to being accurate, this bill would very likely push many operations over the edge.

Cattle producers will continue to work every day to protect and improve the environment so that we and future generations will be able to continue to live off the land and feed our nation and the rest of the world. However, NCBA must oppose any bill that could cause significant financial hardship to our members.

Sincerely,

Gary Voogt
President

AMERICA'S CATTLE INDUSTRY

Denver

Washington D.C.

Chicago


NATIONAL CATTLEMEN'S BEEF ASSOCIATION

1301 Pennsylvania Ave. NW, Suite #300 • Washington, DC 20004 • 202 347 6228 • Fax 202 638 0967

June 18, 2009

The Honorable Collin C. Peterson
 Chairman
 House Committee on Agriculture
 1301 Longworth House Office Building
 Washington, DC 20515

The Honorable Frank D. Lucas
 Ranking Member
 House Committee on Agriculture
 1305 Longworth House Office Building
 Washington, DC 20515

Dear Chairman Peterson and Ranking Member Lucas:

After careful consideration, the National Cattlemen's Beef Association has decided to oppose the "American Clean Energy and Security Act of 2009," H.R. 2454. We are extremely concerned about the substantial predicted increases in energy and other costs of doing business that may result from the bill; a weak offsets section; and the fact that producers have not had adequate time to fully analyze the very real and significant effects the voluminous bill would have on their businesses.

NCBA members are responsible environmental stewards who respect and care for the land, air, water, and animals that are fundamental to sustaining their way of life. Our members are very concerned, however, about the effects this bill could have on the costs of fuel, electricity, feed, fertilizer, equipment, and other inputs necessary to maintain a cattle operation. Economists have estimated that H.R. 2454 would cause farm income to drop anywhere from \$8 billion in the short term to \$50 billion long term. The cattle industry has suffered significant economic setbacks lately, and if these estimates are close to being accurate, this bill would very likely push many operations over the edge. NCBA simply cannot support a bill that would cause this kind of economic devastation.

In addition, the agriculture industry has received assurances all along that we would be able to increase income by generating offsets to sell to regulated sectors of the economy. H.R. 2454 does not provide any assurances that agriculture offsets would be able to be generated for this purpose.

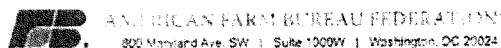
Finally, there has not been adequate time to sift through the voluminous bill and understand all the effects it could have not only on the cattle industry, but on the U.S. economy as a whole. When Congress considers a bill of this magnitude and economic importance, we believe careful analysis and deliberation is essential. We urge Congress to slow down the process, carefully analyze the bill, and make sure society fully understands the significance of these actions before moving forward. Action on this legislation without sufficient forethought and careful consideration could be economically devastating.

Cattle producers will continue to work every day to protect and improve the environment so that they and future generations will be able to continue to live off the land and feed our nation, but NCBA must oppose any bill that could cause financial ruin to our members.

Sincerely,

A handwritten signature in black ink, reading "Gary Voogt". The signature is written in a cursive, flowing style with a large initial "G" and "V".

Gary Voogt
President



(p) 202 406 1970
 (f) 202 406 3606
 www.fb.org

May 18, 2009

Dear Members of the House Energy and Commerce Committee:

Over the last several months, Farm Bureau has worked assiduously with congressional offices and committee staff in identifying issues and principles that are critically important to agriculture and which we believe must be included in any climate change legislation. We appreciate the willingness of many offices and members to hear our concerns on this important matter.

Upon a careful examination, it is clear the compromise bill unveiled on Friday does not reflect the principles we have identified. The bill does not meet the needs of U.S. agriculture, and we are opposed to it. We call on all members of the committee to reject this bill when it comes up for a vote. That will be the most effective way of preventing the harm that would result to U.S. agriculture from this measure.

Even though the compromise does not include agriculture under the cap, in other respects it utterly ignores the principles we have identified as critical to U.S. agriculture. We have consistently advocated that any cap-and-trade bill must:

- Recognize and support the benefits agriculture can provide.
- Must make economic sense for agriculture
- Provide for a strong leadership role for USDA
- Base any carbon sequestration program on sound science

While some sectors of the economy were accommodated as the legislation was crafted, the bill ignores the complex needs of a very diverse U.S. agricultural industry. Indeed, the compromise is laden with so many policy prescriptions that its impact on the U.S. is almost impossible to measure and evaluate. We can be certain, however, that it will increase our operating costs and reduce our competitiveness abroad. For instance, the measure does not adequately provide for alternative sources of energy that will "plug the hole" created when fossil fuel costs escalate dramatically. We are greatly concerned about the potential impact on fertilizer prices, given their sensitivity to natural gas costs. Moreover, the bill would effectively lock the United States into these changes regardless of what is done by other countries, such as China and India. Such an approach is little more than gambling with U.S. jobs and productivity. We urge all members to reject such an approach.

Taken as a whole, the compromise falls far short of what is necessary for agriculture to survive and grow. We urge all members to vote "No" when H.R. 2454 is brought up for a vote.

Sincerely,

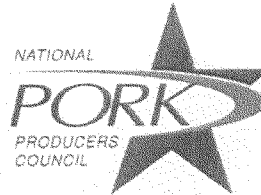
A handwritten signature in blue ink, which appears to read 'Bob Stallman'.

Bob Stallman
 President

Cc: House Agriculture Committee

June 18, 2009

The Honorable Collin C. Peterson
Chairman, Committee on Agriculture
U.S. House of Representatives
2211 Rayburn House Office Building
Washington, D.C. 20515



The Honorable Frank D. Lucas
Ranking Member, Committee on Agriculture
U.S. House of Representatives
2311 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Peterson and Ranking Member Lucas:

The National Pork Producers Council (NPPC) acknowledges the House Energy and Commerce Committee for its work on the complex challenges posed by climate change. However, America's pork producers are intensely concerned over any policy proposals that will further raise their cost of production or affect competitiveness. While H.R. 2454 has been crafted to somewhat minimize its impacts on the pork industry, the overall burden climate change legislation would place on our businesses and farms would be too great to overcome. As a result, in its current form, NPPC opposes passage of H.R. 2454, the "American Clean Energy and Security Act of 2009."

Our particular sensitivity at this point is driven in part by the economic crisis that pork producers have been in for nearly 20 straight months – where the cost of raising a pig exceeds the price a producer receives for that pig. The recent scare over the H1N1 virus, and the resulting loss of some export markets, has only exacerbated this crisis.

In particular, producers fear the impact that H.R. 2454 will have on the cost of electricity, diesel fuel, grain, propane, animal health products, fertilizer, chemicals, farm equipment and materials such as steel and concrete that are necessary for the continued operations of their farms and well-being of their animals. Pork producers are already losing money for every pig sold – currently about \$30 per hog – and any additional costs will simply drive them deeper and more firmly into financial despair.

If Congress insists on passing a climate change bill, the pork industry believes that protections for pork producers – and all livestock agriculture – need to be included in it. In our June 11, 2009, written testimony submitted to the House Committee on Agriculture, NPPC indicated that a market-oriented cap-and-trade system for addressing greenhouse gas emissions, such as the one included in H.R. 2454, is preferable to either a carbon tax or a stringent command-and-control approach. H.R. 2454's treatment of agriculture as a valuable source of emission offsets, and not a capped sector, is an essential component for the ultimate success of any cap-and-trade system.

NPPC also identified a number of areas where H.R. 2454 must be improved for pork producers to support its passage. Foremost among these is that the bill designate USDA as the lead agency on the design and implementation of the agricultural offsets program.

and on the development of any regulations affecting livestock producers. USDA has the institutional resources and the successful long-term track record of dealing with agricultural producers, which are vital to ensuring an understanding of the unique nature of agriculture. This includes ensuring that producers currently using emissions-reduction technologies are allowed into the offsets program and having the capability of verifying the adequacy of agricultural offsets through research, statistical sampling and spot checks.

The bill also needs to more clearly address and account for the tremendous advances that livestock producers have already made in reducing their carbon footprint. U.S. livestock agriculture is a tremendous example of how the world can produce the goods and services people need, in this case the very food we eat, while producing less GHGs per calorie of food.

In our view, it makes far greater public-policy sense to consider total food needs -- given the size of a population, its income levels and preferences and needs for food products -- and then consider how well a particular food production system meets these needs while also conforming to other societal objectives, such as food safety, affordability and a minimal environmental footprint, including fossil fuel use and GHG emissions. Since 1990, production agriculture's greenhouse gases have only increased 3.5 percent, while at the same time total U.S. meat production has increased 40 percent. This means almost 30 percent less in total livestock sector GHG emissions per pound of meat produced from 1990 to the present. Between 1948 to the present, while the manure generated by U.S. meat producing animals has been reduced by 25 percent, the production of meat from the animal herd has increased by 700 percent.

Pork producers are also concerned about the bill's impact on trade opportunities and ensuring a level playing field across international markets. Great care must be taken in implementing the bill's measures to avoid possible WTO disputes and to eliminate them or minimize them to the fullest extent possible. In this vein, the bill needs to require USDA and EPA to work in close consultation with the United States Trade Representative on the impacts on trade of any domestic or international GHG action.

While U.S. pork producers still have significant concerns with H.R. 2454, we recognize that it is an important first step in addressing the challenges of climate change, and we look forward to continuing to work with Congress on drafting a bill that takes account of all the issues facing livestock agriculture. However, until these important adjustments are made, the U.S. pork industry simply cannot support H.R. 2454.

Thank you for your time and attention to this important matter.

Sincerely,

DEBIL

Don Butler
President
National Pork Producers Council

The Global Voice for the U.S. Pork Industry



The Fertilizer Institute

Nourish. Replenish. Grow

Forrest W. West
President

May 19, 2009

The Honorable Henry Waxman
Chairman
House Energy and Commerce Committee
United States House of Representatives
Washington, D.C. 20510

Dear Chairman Waxman:

I am writing to you on behalf of members of The Fertilizer Institute (TFI) to express our concern with the proposed climate change allowance allocation program designed to provide transition assistance for energy-intensive, trade-exposed industries. While this allowance program has been designed to cover such industries' increased costs from the climate change program, the number of allowances that would ultimately flow to the fertilizer industry appears to fall short of what would be needed to ensure global competitiveness for U.S. fertilizer producers. Absent dramatic changes, the current allocation program will render the U.S. nitrogen industry uncompetitive, and threatens to force fertilizer production overseas to countries that do not regulate emissions resulting in a loss both for the economy and for the cause of reducing CO₂ emissions.

Fertilizer is a strategic commodity and, in order to feed a global population that grows by 80 million people a year, it must be an integral part of a U.S. food security strategy. Fertilizers are currently responsible for 40 to 60 percent of the world's food supply. Harvest after harvest, fertilizers replenish our soils by replacing the nutrients removed by each season's crop. Fertilizers are critical to ensuring that American farmers grow an adequate supply of nutritious food for American and international consumers. Global food security cannot be attained without the use of commercial fertilizers. It is imperative that the United States has a strong domestic fertilizer industry to ensure this valuable resource is available for a stable food production system.

The U.S. fertilizer industry is one of the most energy-intensive industries in the nation. Natural gas accounts for 70 to 90 percent of the cost of producing nitrogen fertilizer. Natural gas is the feedstock, or raw material, for making anhydrous ammonia. Anhydrous ammonia is directly applied in the field by U.S. farmers and also serves as the source of nitrogen in the production of other major fertilizer materials. Nitrogen is a key nutrient in maintaining yields for corn, wheat and a multitude of crops produced by American farmers. There is no economic substitute today for this energy component.

Union Center Plaza
820 First Street, N.E. Suite 430
Washington, DC 20002

202.962.1960
202.962.1977 fax
www.tfi.org

Due to the significant rise in both the price and volatility of U.S. natural gas prices since the late 1990's, the U.S. fertilizer industry has permanently closed 26 nitrogen plants as imports have increased from countries with significantly lower natural gas prices. U.S. farmers are now dependent on imports for about 55 percent of their nitrogen fertilizer needs. The remaining U.S. producers have focused their ingenuity and capital on being the most energy efficient fertilizer sectors in the world. U.S. manufacturers have voluntarily taken early action to achieve energy efficiencies and between 1983 and 2006, the industry reduced the amount of natural gas used to produce a ton of ammonia by 11 percent. With that energy efficiency came carbon reductions. The U.S. Environmental Protection Agency (EPA) estimates that between 1990 and 2006, U.S. nitrogen producers reduced their greenhouse gas (GHG) emissions by 4.5 million tons of CO₂ equivalent. While our member companies are committed to additional energy efficiency projects, there will come a point where, due to the constraints of chemistry, the efficiency gains will be limited. There are simply no loopholes in the principles of chemistry. Unfortunately, the U.S. fertilizer industry is given no credit under the Waxman bill for the impressive early action it took to reduce its carbon footprint.

The U.S. fertilizer industry competes in the global marketplace that is comprised of producers from countries with no carbon reduction policies, like Russian and Middle Eastern producers, or producers in the European Union and Australia, whose governments have adopted or drafted policies that aim to fully protect their energy-intensive/trade-intensive industries including fertilizer. Once these policies are enacted, with no U.S. alignment, the U.S. fertilizer industry will be placed in a severe competitive disadvantage. Additional increases in the domestic price of natural gas caused by fuel switching resulting from this legislation will also significantly increase the domestic cost of producing nitrogen fertilizer, leading to an even more severe competitive disadvantage. U.S. producers will face a stark choice of losing market share to imports or moving production overseas – neither choice is good for the U.S. economy, the environment or U.S. food security.

In short, we ask that Congress ensure that any legislation it passes to address climate change does not create a competitive disadvantage for America's fertilizer industry. The U.S. fertilizer industry provides high paying jobs to hardworking Americans in manufacturing plants, retail and wholesale businesses and in a host of related industries such as rail, barge and truck transportation. It is therefore critical that any climate change policy does not jeopardize the domestic fertilizer industry that is such a vital link in food production, food security and the U.S. economy.

Sincerely yours,



Ford West
President

CC: House Energy and Commerce Committee Members

May 21, 2009

The Honorable Henry Waxman
Chairman
Energy and Commerce Committee
U.S. House of Representatives
Washington, DC 20515

The Honorable Joe Barton
Ranking Member
Energy and Commerce Committee
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Waxman and Ranking Member Barton:

We respect your attempt to address concerns about climate change and the long-term effects of greenhouse gas emissions. We also know that U.S. agriculture plays a positive role in carbon sequestration.

However, we in the peanut growing sector have serious reservations about legislative proposals that would impose a new "cap-and-trade" regime on farmers at a time when many farmers are facing a negative cash flow environment. Peanut growers produced a record high peanut crop in 2008, which was followed by the lowest peanut planting since 1915. Peanut growers found it much more difficult this year to obtain loans to farm as projected production costs have surpassed farm revenue.

The last thing we need is a cap-and-trade program that will sharply increase already high production costs, while offering little, if any economic upside from participation in a carbon offset program. The small amount of revenue that some might gain would not come close to offsetting the anticipated increases in input costs for farmers, which could not be passed on to those farther along in the food supply chain.

The financial health of the farm sector is just too unstable to absorb the shock of a new, un-tested regulatory scheme, such as the proposed American Clean Energy and Security Act (H.R. 2454), which is moving through your committee. Rising energy prices and other input costs will continue to result in higher production costs, and this is occurring without implementation of a mandated cap-and-trade system.

As you consider new climate change proposals, we encourage you to look at the cost of imposing new limits on farmers that drive the economy of rural America. At least one study shows that a cap and trade bill would add \$6 to \$12 billion to the total crop production costs of just eight crops (not including peanuts), and lead to a significant decline in farm income.

We urge you to use common sense in staking out a reasoned approach to analyzing climate change legislation, so we do not unduly undermine one of the few parts of the economy that so far has provided some semblance of stability, while providing an extremely efficient and reliable supply of food to our nation. To us it is clear, the time is

not right to enact cap-and-trade legislation and therefore, we have no other choice than to oppose such legislation.

Sincerely,

New Mexico Peanut Growers Association
North Carolina Peanut Growers Association
Oklahoma Peanut Commission
Panhandle Peanut Growers Association
Peanut Growers Cooperative Marketing Association
South Carolina Peanut Growers Association
Texas Peanut Producers Board
Virginia Peanut Growers Association
Western Peanut Growers Association

Cc: All Members of the Energy and Commerce Committee



June 9, 2009

The Honorable Collin Peterson
Chairman, House Agriculture Committee
U.S. House of Representatives
1301 Longworth House Office Building
Washington, DC 20515

The Honorable Frank Lucas
Ranking Member, House Agriculture Committee
U.S. House of Representatives
1305 Longworth House Office Building
Washington, DC 20515

Dear Chairman Peterson and Ranking Member Lucas:

The American Meat Institute (AMI) is the nation's oldest and largest meat packing and processing industry trade association. Our members slaughter and process more than 90 percent of the nation's beef, pork, lamb, veal, and nearly 75 percent of the turkey produced in the United States. AMI has reviewed H.R. 2454, The American Clean Energy and Security Act, and has serious concerns about the bill.

Specifically, the bill's provisions related to carbon emissions could significantly increase energy, production and transportation costs for the meat and poultry industry. One need look back no further than to last year to see the impact that high input and energy costs had on the price and competitiveness of meat and poultry products in the market place and for consumers. In that regard, this cap-and-trade policy could place U.S. businesses at a competitive disadvantage with our international competitors, adversely affecting our ability to export. Such disadvantages in the global market would have the potential for severely impacting the U.S. animal protein sector from producer through processor.

Any legislation focused on cap and trade must not imperil the economic benefits provided by animal agriculture and the meat and poultry industry. The U.S. meat and poultry industry contributes more than \$832.4 billion, nearly 6 percent of GDP, to our nation's economy. Legislation passed by Congress must be economically feasible, not put U.S. businesses at a competitive disadvantage in the global market, and provide the United States Department of Agriculture with a strong leadership role.

AMI respectfully requests that an economic impact analysis be performed evaluating the effects of H.R. 2454 on the meat and poultry industry. Until the impact of this legislation on the meat and poultry industry is fully understood, AMI can not support the legislation.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J. Patrick Boyle". The signature is written in a cursive, flowing style.

J. Patrick Boyle
President and CEO
American Meat Institute



NATIONAL MEAT ASSOCIATION
1970 Broadway, Suite 825, Oakland, CA 94612
Ph. (510) 763-1533 or (202) 667-2108 • Fax (510) 763-6186
staff@nmaonline.org • <http://www.nmaonline.org>

June 11, 2009

Congressman Collin C. Peterson
Rayburn House Office Building
Room #2211
Independence Avenue & S. Capitol Street, SW
Washington, D.C. 20515

Congressman Frank Lucas
Rayburn House Office Building
Room 2311
Independence Avenue & S. Capitol Street, SW
Washington, D.C. 20515

Dear Chairman Peterson and Ranking Member Lucas:

Thank you for the continuing dialogue you have afforded our associations on the issue of climate change. Your continued outreach to the agricultural community remains our most important forum in which to participate in this monumental undertaking. We are writing to share our perspective on the potential implications of the legislation for the food supply chain and ultimately, American consumers. At this point, we frankly have more questions than answers regarding the impacts of this legislation.

As you probably know, many food industry companies, for sound business reasons, have already undertaken efforts to improve production and energy efficiency in their plants and throughout the supply chain. Many of our member companies have participated in contractually binding CO2 emission reduction programs. In addition, several of our member companies operate in countries that are subject to Kyoto Protocol reduction requirements, and some have even participated in the Clean Development Mechanism (CDM) projects under the Kyoto Protocol. Thus, our associations are familiar with the proposed scope and intent of many of the requirements included in the legislation. However, the details and specific policy implications are less clear.

Now that the Waxman-Markey bill has moved through the House Energy and Commerce Committee and the bill language is available, we finally have an opportunity to conduct a more thorough analysis of the legislation. At this point, however, because of the complexity involved, the vast majority of our member companies have not fully completed their assessment of the

Letter to Chairman Peterson and Ranking Member Lucas
 June 11, 2009
 Page 2

legislation. As we continue our analysis, we want to highlight for you some of the many and complex issues that appear to be the most significant for the food sector - including producers, processors, and consumers. Though many of the details of the legislation have only recently been provided, our limited analysis safely concludes that the legislation would have a significant impact on the entire food supply chain.

The direct cost of allowances for entities that emit more than 25,000 tons of CO₂ will be directly added to the operating cost of each facility. One can safely assume that firms would seek to cover added costs by passing them forward or backward in the supply chain. This will inevitably impact costs for consumers, returns for producers, or a mix of both. Without a reallocation of these costs, processing firms would not remain viable.

Numerous studies have predicted prices for future allowances. The CBO score for the Waxman-Markey bill places the cost at \$26 per ton in 2019, the 10th year of a 10 year budget scoring window. But the CBO budget scoring window does not cover the life of the bill, which is scheduled to require emission reductions until 2050—well beyond CBO's analysis. We believe an analysis through 2050 is critical in order for our industry to understand the costs in the out years when allowance supply is reduced to less than one-fifth the level at the beginning of the legislative mandate.

The allocation formula in the Waxman-Markey bill exempts through 2029 some of the most high intensity users of energy from needing to purchase a significant portion of their allowances. Meanwhile, food production facilities will have to purchase allowances. At the same time, they will be competing in energy markets with those that received a significant portion of their allowances for free. It is unclear how this imbalanced competition in the energy market will impact entities that must continue to pay full price for allowances. We are also focused on the downstream effect of this cost structure for the farm gate and at retail for consumers.

Not only is it important to understand the direct cost of allowances, it is equally important to understand the added indirect impact of higher energy costs on the food production chain. These costs would impact not only those above the reduction threshold, but those below it as well. Free allowances to the energy producing sectors will only cover a portion of their CO₂ emissions, so even though free allowances will not end until 2029, the impact of higher energy prices will begin to be felt immediately. The impact of higher energy costs on consumers, producers and processors is not yet well understood, but it will not be marginal.

It is surmised that the legislation would create incentives for the use of more efficient methods of production, resulting in the use of less energy. But as the Committee understands, our industry relies heavily on the use of heat for the sanitation of facilities and the protection of

Letter to Chairman Peterson and Ranking Member Lucas
June 11, 2009
Page 3

consumers from food-borne pathogens. We can safely project that the current legislation would make food safety interventions more expensive. Despite the demand created by the legislation to reduce energy usage, this is not a place where our companies can responsibly make energy reductions.

Agricultural offsets have been discussed as revenue opportunities for producers and as a means to help alleviate the cost of allowances for emitters. The legislation places several statutory requirements on the creation of offsets which may inhibit the creation of agricultural offsets. Additionally, the legislation places hurdles on the actual use of offsets by emitters. These provisions should be carefully evaluated to determine the degree to which agricultural offsets will be available, and the degree to which emitters could actually use offsets for compliance purposes. An ineffective offset program would not provide benefits to producers and would reduce opportunities for emitters to meet their compliance obligation. Understanding the impact of the statutory provisions on offsets is a critical piece of knowledge that is missing.

Many observers and indeed proponents of this legislation concede it will come with costs. We fear that efforts to help certain sectors minimize burdens will significantly impact the cost structure of one of the most critical sectors of the national economy: that sector which provides the most basic human necessity – food.

We believe the Agriculture Committee should carefully analyze the legislation to fully understand the concerns we have raised, and we applaud your efforts to review this pending legislation through the hearing process.

During these difficult economic times, we believe it is unwise to insert additional economic uncertainties into an already fragile marketplace. Given this and the issues raised in this letter, in the absence of a more thorough examination of this monumental bill and its economic consequences on the food supply chain and American consumers, we respectfully ask that Members not support passage at this time.

National Meat Association

American Meat Institute

National Chicken Council

National Turkey Federation

National Grain and Feed Association



June 10, 2009

The Honorable Collin Peterson
Chairman, House Agriculture Committee
U.S. House of Representatives
1301 Longworth House Office Building
Washington, DC 20515

The Honorable Frank Lucas
Ranking Member, House Agriculture Committee
U.S. House of Representatives
1305 Longworth House Office Building
Washington, DC 20515

Re: American Clean Energy and Security Act, H.R. 2454

Dear Chairman Peterson and Ranking Member Lucas:

The American Frozen Food Institute (AFFI) is the national trade association that promotes and represents the interests of all segments of the frozen food industry. AFFI represents a large number of small- and medium-sized facilities nationwide that have serious concerns about H.R. 2454, the American Clean Energy and Security Act. We believe that H.R. 2454 imposes potentially significant yet poorly understood costs on the food processing industrial sector as a consequence of having failed to distinguish properly between significant and insignificant sources of greenhouse gas emissions.

In particular, the bill would impose significant direct and indirect costs on the frozen food industry and, consequentially, on the cost of frozen foods. The bill would impose significant direct costs by requiring certain frozen food processing facilities¹ to participate in the cap-and-trade program by purchasing emission allowances from the Environmental Protection Agency or

¹ See H.R. 2454, § 312 (definition of "Covered Entities" at proposed 42 U.S.C. § 700(13)(H)).

through the secondary market. According to the Congressional Budget Office's most recent cost estimate, emission allowances purchased at auction would result in a minimum of \$4.45 million (\$2009) per covered facility being deposited from 2011 to 2019 in the U.S. Treasury as a direct tax on food production.²

The bill would also impose significant indirect costs by increasing the cost of natural gas and electricity used to operate frozen food facilities, the cost of fuel used to transport raw materials and finished products, and the cost of raw materials. The impact of higher energy prices just last year on food costs is experience enough to warrant a cautious approach to imposing additional energy-related costs on the food production sector. These higher costs will undoubtedly put American businesses at an international competitive disadvantage, and reduce our ability to export.

In light of these impacts, any climate change legislation must carefully distinguish between significant and small sources of greenhouse gas emissions. EPA has estimated that the food processing industry contributes less than 0.2 percent³ to nationwide greenhouse gas emissions, yet the bill imposes significant burdens on this industrial sector. AFFI respectfully urges the Committee to focus the bill's attention on significant sources of greenhouse gas emissions that may be more efficiently controlled.

Any climate change legislation must also carefully and accurately estimate in advance the economic impact of the legislation on food prices. It is imperative that no climate change law be enacted without understanding the economic impact of the bill on the food processing sector. AFFI respectfully urges the Committee to call for an economic impact analysis of H.R. 2454 on the food processing industrial sector.

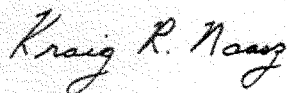
In sum, until this legislation focuses properly on significant sources of greenhouse gas emissions, and the Congress fully assesses the economic

² CONGRESSIONAL BUDGET OFFICE, COST ESTIMATE: H.R. 2454 AMERICAN CLEAN ENERGY AND SECURITY ACT OF 2009 13 (June 5, 2009) (estimating emission allowance prices of \$15/MTCO₂e to \$26/MTCO₂e in 2011 and 2019, respectively).

³ See Technical Support Document for Food Processing Facilities: Proposed Rule for Mandatory Reporting of Greenhouse Gases 3 (EPA Feb. 4, 2009) and Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2007 ES-6 (EPA 430-R-09-004, Apr. 15, 2009) (reporting total 2007 CO₂e emissions of 7,150.1 MMTCO₂e).

impacts of the bill on the food processing industrial sector, AFFI cannot support the legislation.

Respectfully submitted,

A handwritten signature in black ink, reading "Craig K. Ivasz". The signature is written in a cursive style with a large, stylized "C" and "I".

Craig K. Ivasz
President & CEO
American Frozen Food Institute



June 10, 2009

The Honorable Collin Peterson
Chairman, House Agriculture Committee
U.S. House of Representatives
1301 Longworth House Office Building
Washington, DC 20515

The Honorable Frank Lucas
Ranking Member, House Agriculture Committee
U.S. House of Representatives
1305 Longworth House Office Building
Washington, DC 20515

Re: American Clean Energy and Security Act, H.R. 2454


Dear Chairman Peterson and Ranking Member Lucas:

The Food Industry Environmental Council ("FIEC") is a coalition of more than 50 food processors and food trade associations that together represent more than 15,000 facilities across the nation, contribute hundreds of billions of dollars in sales to the economy and employ approximately 1.5 million people. According to the Environmental Protection Agency (EPA), the food processing sector contributes less than 0.2 percent to nationwide greenhouse gas emissions. We believe that H.R. 2454 imposes potentially significant yet poorly understood costs on the food processing industrial sector as a consequence of having failed to distinguish properly between significant and insignificant sources of greenhouse gas emissions.

In particular, the bill would impose significant direct and indirect costs on the food and beverage industry and, consequentially, on the cost of food and beverages. The bill would impose significant direct costs by requiring certain food and beverage processing facilities to participate in the cap-and-trade program by purchasing emission allowances from the EPA or through the secondary market. The bill would also impose significant indirect costs by increasing the cost of natural gas and electricity used to operate food and beverage facilities, the cost of fuel used to transport raw materials and finished products, and the cost of raw materials.

Until this legislation focuses properly on significant sources of greenhouse gas emissions, and the Congress fully assesses the economic impacts of the bill on the food processing industrial sector, FIEC cannot support the legislation.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "R. Garfield", with a stylized flourish at the end.

Robert Garfield
Chairman
Food Industry Environmental Council



Agriculture Energy Alliance

Representing agriculture as a producer and consumer of energy

June 11, 2009

The Honorable Nancy Pelosi
Speaker of the House
United States House of Representatives
Washington, D.C. 20515

Dear Madam Speaker:

We are writing you today on behalf of American farmers and producers of farm inputs to express our concern with aspects of the American Clean Energy and Security Act of 2009 (H.R. 2454) approved by the House Energy and Commerce Committee on May 21, 2009. As it is currently formulated, this legislation would burden U.S. farmers with significantly higher production costs. It would also put U.S. producers of key agricultural inputs such as fertilizer and petroleum products at a serious competitive disadvantage and would force even more production of these critical farm inputs overseas to countries with no carbon reduction policies. Contrary to the hopes of many in the agricultural community, the bill does not provide farmers with the ability to recover any of these cost increases through the sale of carbon offset credits. These cost increases will be prohibitive if an international greenhouse gas reduction agreement is signed after U.S. production of fertilizer and petroleum products has been forced overseas. We believe that the American Clean Energy and Security Act of 2009 must address these concerns.

The agricultural sector is highly energy intensive and relies on natural gas, refined petroleum products and other energy inputs for food processing, irrigation, crop drying, heating farm buildings and homes, crop protection chemicals, and nitrogen fertilizer production. Even though the bill does not include agriculture under the cap, the net result of this legislation would be to increase dramatically farmers' energy costs.

The result of this bill will be to force production of key inputs such as fertilizer and petroleum products to countries that do not regulate carbon emissions. For example, the U.S. fertilizer industry competes in a global marketplace that includes many producers from countries with no carbon reduction policies, like Russian, Chinese and Middle Eastern producers. U.S. fertilizer production also competes with producers in the European Union and Australia whose governments have adopted or drafted policies that aim to fully protect their energy-intensive/trade-intensive industries including fertilizer. U.S. farmers are already dependent on imports for about 55 percent of their nitrogen fertilizer needs. As H.R. 2454 is currently drafted it would place U.S. fertilizer producers at a competitive disadvantage and force them to make a stark choice between losing market share to imports or moving production overseas.

The current version of H.R. 2454 also fails to recognize and support the benefits that agriculture can provide to the reduction of carbon emissions. Agricultural best management practices can play an important role in reducing carbon emissions. In addition, these reductions are low-cost and can be generated rapidly during the early years of a cap and trade program when a quick

Continued

Page 2
AEA – June 11, 2009

start is most urgent. We feel strongly that any cap-and-trade legislation must recognize and account for the benefits that agriculture can provide and should also allow farmers to earn the potential revenue from carbon sequestration trading to help offset increased input costs.

As currently drafted, H.R. 2454 fails to address the most important concerns of the U.S. agricultural sector. We believe this legislation must directly address increased input costs, the potential to force fertilizer production and petroleum refining overseas, and the tremendous offset capability of American farm production. To be viable, any climate change legislation must recognize the critical role that agriculture can play in protecting and restoring our environment. At the same time, it must not and cannot place the unbearable burden of increased prices for petroleum products, fertilizer, electricity and other agricultural inputs on the backs of American farmers. Particularly in this difficult economic period, we must ensure that our environmental goals are met in a way that does not endanger jobs, investment or food security provided by our agricultural sector. Put another way, this legislation should be supportive of, not in opposition to, our collective mission of feeding America and the world.

Sincerely,

Agribusiness Association of Iowa
Agricultural Retailers Association
Agrium Inc.
American Agri-Women
American Plant Food Corporation
Associated Industries of Florida
Brandt Consolidated
CF Industries
CHS Inc.
Chemical Industry Council of Illinois
D.B. Western, Inc.
Far West Agribusiness Association
Florida Chamber of Commerce
Florida Farm Bureau Federation
Florida Fertilizer & Agrichemical Association
Florida Strawberry Growers Association
GROWMARK
Hardee County Farm Bureau (FL)
Hillsborough County Farm Bureau (FL)
Illinois Fertilizer & Chemical Association
Indiana Grain & Feed Association
Indiana Plant Food & Ag Chemicals
Association
International Raw Materials, Ltd.
W.B. Johnston Grain Co.
J.R. Simplot Company
Kansas Agribusiness Retailers Association
Kansas Grain and Feed Association
Minnesota Crop Production Retailers
Minnesota Agri-Growth Council
Missouri Agribusiness Association
Montana Agricultural Business Association

NCRA
National Grange
Nebraska Agri-Business Association
North Dakota Agricultural Association
Oklahoma Ag Retailers Association
Oklahoma Grain & Feed Association
Oklahoma Seed Trade Association
Peace River Valley Citrus Growers
Association
Polk County Farm Bureau (FL)
PotashCorp
Rocky Mountain Agribusiness Association
Sarasota County Farm Bureau (FL)
Society of American Florists
South Carolina Fertilizer & Agrichemicals
Association
South Dakota Agri-Business Association
South Dakota Grain & Feed Association
Southern Crop Production Association
Terra Industries Inc.
Texas Agricultural Cooperative Council
Texas Grain & Feed Association
The Andersons, Inc.
The Fertilizer Institute
The McGregor Company
Western Plant Health Association (CA)



ALFA NEWSLETTER

June 8, 2009

The Honorable Spencer Bachus
2746 Rayburn House Building
Washington, DC 20515

Dear Congressman Bachus:

Thank you for your letter last month to Chairman Waxman and Ranking Member Barton stating your concerns about the negative impacts of the proposed American Clean Energy and Security Act. On behalf of more than 440,000 members of the Alabama Farmers Federation, I share your concerns and ask that you vote "no" on H.R. 2454, which passed the House Energy and Commerce Committee on May 21.

The bill would create a financial hardship for many Alabama farmers and would undermine our nation's food security and independence by driving more agricultural production offshore. There is no specific mention of agriculture offsets in this bill, and the Committee has chosen to omit many key principles that were offered by agricultural groups prior to its introduction.

This legislation will significantly increase the cost of production to family farmers and reduce our competitiveness abroad. The bill does not adequately provide for alternative sources of energy that will "plug the hole" created when fossil fuel costs escalate dramatically. We are greatly concerned about the potential impact on our farmers' input costs, including diesel fuel for tractors and other equipment, fertilizer costs which are sensitive to natural gas prices, propane for heating poultry houses, not to mention everyday utility costs.

The legislation also raises concerns because the bill has a limited definition of biomass that could exclude millions of acres of productive Alabama forest and agricultural land from being considered acceptable for production of renewable biomass. It also allows for authorized trading of carbon credits, which could lead to speculation that could adversely affect commodity markets. In addition, the bill includes provisions allowing up to 50% of offset projects to be outside the United States, which could significantly reduce the value of domestic products.

Agriculture can play a role in decreasing the United States dependence on foreign oil through the production of alternative fuels and in protecting the environment through the sequestering of carbon on agriculture and forest lands. This bill, however, will hurt families, drive small companies and farms out of business and stifle the current economic recovery.

Thank you again for raising concerns about the negative consequences of this bill, especially in Alabama and the Southeast. I urge you to oppose this legislation as written. Please contact me if we can answer questions or provide additional comments about the potential impact of this bill on Alabama agriculture.

Sincerely,

Jerry A. Newby
Jerry A. Newby
President

JAN:gm



P.O. Box 206
Cheyenne, WY 82003
113 East 20th Street



Phone: 307-638-3942
Fax: 307-634-1210
Email: info@wysga.org
www.wysga.org

President: Frank Shepperson, *Midwest*
Region I Vice President: David Kane, *Sheridan*
Region III Vice President: Philip Marton, *Casper*
Region V Vice President: Jim Wilson, *Thermopolis*

First Vice President: Mark Eisele, *Cheyenne*
Region II Vice President: David Whitman, *Laramie*
Region IV Vice President: Charles Price, *Daniel*
Executive Vice President: Jim Magagna, *Cheyenne*

June 16, 2009

Representative Cynthia Lummis
1004 Longworth HHR
Washington, DC 20515

Dear Representative Lummis:

The Wyoming Stock Growers Association (WSGA) has represented the interests of Wyoming's cattle producers for 137 years. Our over 1000 members rely upon us to strive to create a business climate that provides the opportunity for profitability and the generational transfer of their ranches.

WSGA believes that legislation currently under consideration by the U.S. House of Representatives would devastate much of Wyoming agriculture. The Waxman-Markey bill (HR 2454) would significantly increase the already crushing burden of energy costs on our industry.

Crop agriculture is widely recognized as a high intensity energy user. Perhaps less-well understood are the energy costs of western ranching. Our members ranch over extremely large acreages with limited access routes. This necessitates driving hundreds of miles, often on a daily basis, to check livestock, water developments and range conditions utilizing 4-wheel vehicles pulling horse trailers. In addition, trips to town for parts, feed and supplies are long and frequent. Livestock watering sources are additional high consumers of energy.

Ranchers have little ability to control input costs for energy. At the same time they are fundamentally "price takers" for their livestock. High energy costs in 2008 consumed potential profitability for most Wyoming ranchers. The permanent return to high energy costs that will inevitably result from passage of HR 2454 will push many multi-generational Wyoming ranching families beyond profitability and force the sale of ranches. The all-too-common result is subdivision of ranch lands leading to loss of open space, wildlife habitat and agricultural dependent communities.

WSGA appreciates your strong opposition to this legislation. We urge your House colleagues to recognize the devastating unintended consequences to American agriculture that would result from its passage.

Sincerely,

Jim Magagna
Executive Vice President

Guardian of Wyoming's Cow Country Since 1872



State of Indiana

June 16, 2009

Dear Indiana Congressional Delegation,

We write this letter as a unified voice of concern for Indiana agriculture. Our organizations represent a wide variety of commodities, livestock species, advocacy groups, and agribusiness sectors. Agriculture is a vital part of the Indiana economy and continued growth in agriculture is crucial to our economic recovery. Driving people who make a living off the land away from that living is unwise policy.

We write to express our concerns and reservations with the current form of H.R. 2454, the "American Clean Energy and Security Act of 2009". As the bill is written, it does not address the complex needs of agriculture and will result in increased energy prices. These new energy expenses cannot be passed on to consumers due to the nature of commodity markets and the global competitiveness of the food sector. While already in a period of unprecedented volatility and with razor-thin margins, any new input costs the producer is asked to absorb will simply put them at a disadvantage in the world market.

In total, H.R.2454 will not benefit Indiana agriculture and will create substantial obstacles for our national and international competitiveness. The failure to provide full hearings and explanations on how the bill is intended to impact agriculture leaves us no choice but to oppose it as written. Please refer to the attachment for more specific details on the detrimental impacts of H.R. 2454 to Indiana agriculture.

Sincerely,

Indiana State Department of Agriculture
 Kip Tom, CEO – Tom Farms
 Indiana Beef Cattle Association
 Indiana Office of Energy Development
 Indiana Professional Dairy Producers
 Indiana Plant Food & Agricultural Chemicals Association

Indiana Pork Producers Association
 Beck's Superior Hybrids
 Indiana Grain and Feed Association
 Indiana State Poultry Association
 Indiana Farm Bureau

cc: The Honorable Richard Lugar
 The Honorable Evan Bayh
 The Honorable Pete Visclosky
 The Honorable Joe Donnelly
 The Honorable Mark Souder
 The Honorable Steve Buyer
 The Honorable Dan Burton
 The Honorable Mike Pence
 The Honorable Andre Carson
 The Honorable Brad Ellsworth
 The Honorable Baron Hill

Enclosure



AFR
American Farmers & Ranchers
 TERRY DETRICK, President & CEO
 ROYCE MEEK, General Manager

May 20, 2009

The Honorable Frank D. Lucas
 Ranking Member, Agriculture Committee
 U.S. House of Representatives
 1305 Longworth House Office Building
 Washington, D.C. 20515

Dear Representative Lucas:

As Congress and particularly the House Energy and Commerce Committee considers H.R. 2454 "The American Clean Energy and Security Act", American Farmers & Ranchers remains fundamentally opposed to the concept of mandating caps on greenhouse gas emissions. We do not believe the benefits will outweigh the consequential elements of the concept.

While this bill remains silent on and apparently exempts agriculture from its' own carbon footprint, we specifically are opposed to H.R. 2454 because agriculture is not granted credit in this bill for the contributions it already makes in the cycle of life and any future contributions to the effort. As young elementary students we were taught how plants absorb carbon dioxide and give off oxygen. Thus the carbon is sequestered through the roots in the soil until it is disturbed. Producers today are increasing efforts to sequester carbon and clean-up the air through no-till farming, and can contribute even more in this arena in the future. Yet there are no provisions that mandate agriculture producers can participate in these credits.

Also, data that we have been presented clearly indicates capping these emissions will drastically increase the input cost of producing food and fiber for this country and the world. The value of carbon credit, which this bill does not mandate for agriculture, could vary a lot over time and most likely would not be a dependable offset for our increased input costs resulting from the caps. While marketing agriculture commodities plays an important role in producers profits, input costs play an equal if not larger role.

Thirdly, given the historical record of compliance by other nations on trade agreements concerning environment relative issues, a cap policy could place U.S. industries at a competitive disadvantage to other companies internationally. We are all part of the same atmosphere. Why should one country be treated differently over another and deny its' own citizenry opportunity?

AFR's grassroots membership-driven policy states "we oppose additional government regulations without having a proven scientific basis, and unless their cost effectiveness is proven..."

Should H.R. 2454 or any subsequent version cap greenhouse gas emissions, AFR policy states "we support payments from private industry to agriculture for storing carbon in the soil." If carbon emissions are capped and credits issued AFR wants a significant mandatory percentage of these credits be preserved for agricultural producers.

We do favor the elected members of the Congress of the United States shape policy rather than be left to the will of unelected personnel in regulatory agencies. We also prefer the Agriculture Committee have jurisdiction over the development of the carbon credits initiative and agricultural offsets with oversight by the Commodity Futures Trading Commission and U.S. Department of Agriculture.

Congressman Lucas, we compliment you on your stand on behalf of America's farmers and ranchers and speaking up for the producers in the Third Congressional District. We are equally gratified to see so many of your colleagues following a similar stance.

Sincerely,



Terry Detrick
President



May 20, 2009

Representative Phil Gingrey
U.S. House of Representatives
Washington, DC 20515

Dear Representative Gingrey:

The National Chicken Council, National Turkey Federation and United Egg Producers represent virtually 100 percent of the commercial poultry production in the United States, and we are writing because we have serious concerns about the speed with which H.R. 2454, the American Clean Energy and Security Act, is moving through the Energy and Commerce Committee. The bill's cap-and-trade provisions related to carbon emissions has the potential to significantly increase energy and transportation costs for poultry and egg producers and processors at a time when they already are suffering through severe economic hardship.

Our organizations cannot support the bill at this time because we believe there has not been a sufficient analysis of the economic impact it would have on poultry and livestock producers.

Sincerely,

George Watts
President
National Chicken Council
1015 15th Street, NW
Suite 930
Washington, DC 20005

Joel Brandenberger
President
National Turkey Federation
1225 New York Ave., NW
Suite 400
Washington, DC 20005

Gene Gregory
President and CEO
United Egg Producers
1720 Windward Concourse
Suite 230
Alpharetta, GA 30005



OKLAHOMA WHEAT GROWERS ASSOCIATION

P.O. Box 3246 Enid, OK 73702
(580) 234-3464
okwheatgrws@sbcglobal.net
www.owga.org

The Honorable Frank Lucas
United States Congress
Washington, D.C. 20515

Dear Congressman Lucas:

The Oklahoma Wheat Growers Association is greatly concerned about the Waxman/ Markey Climate Change and Energy Bill (H.R. 2454). Our membership has not been convinced that the benefits of this legislation will even attain a breakeven status when comparing the costs to benefits. While it appears that agriculture will not be held responsible for a carbon foot print, the costs that producers will be burdened with from increased costs of supplies which we rely on to produce the safest, most abundant, and cheapest food supply in the world, likely will be catastrophic to Oklahoma wheat producers.

Oklahoma Wheat producers have already been struggling with increased fuel, chemical, and fertilizer prices of the last couple of years. While the general public has seen the commodity prices increase, producers have been met with rapidly increasing break-even costs. Any further increases in production costs would lead many producers to bankruptcy.

The lack of programs to allow a producer to attempt to recoup increased cost through payments for sequestration of carbon in the soils is also very concerning. We were concerned with some of the proposals for these programs already. The numbers being discussed would at best case scenarios, provide a break even for the increased cost, and for most producers still are a net loss. These situations use practices which many producers feel are not proven to be economically and agronomically feasible under current conditions. This legislation magnifies some of the pitfalls.

Another big issue is how this affects the ability of wheat producers not only in Oklahoma but in the rest of the United States to compete with other producers in foreign countries. If competitive countries do not adopt these policies we will be at a major disadvantage. We are already facing disadvantages in competition, many of which can be attributed to policies of the United States government. We are in no way the lowest cost producer of wheat in the world at this time.

Feel free to contact me at 580-234-3464 or okwheatgrws@sbcglobal.net

Sincerely,

Tim Bartram
Executive Director
Oklahoma Wheat Growers Association

The Hon. Collin C. Peterson
Chairman
Committee on Agriculture
U.S. House of Representatives
1301 Longworth Building
Washington, DC 20515

The Hon. Frank Lucas
Ranking Member
U.S. House of Representatives
1301 Longworth Building
Washington, DC 20515

June 9, 2009

Dear Chairman Peterson and Congressman Lucas:

We are writing to express our appreciation for the deep concerns that you have voiced to date regarding H.R. 2454, the "American Clean Energy and Security Act of 2009" in its current form.

Despite the sincere hopes expressed by members of the Administration, the Congress, and of the U.S. agriculture community that the legislation would offer economic opportunity for farmers, ranchers, the U.S. agriculture sector and the communities and workers that depend on this sector, we share your concern that the legislation as currently drafted would instead work serious injury, providing little benefit under an offset program while further inflating near-record high production costs of producers already operating on thin margins, assuming positive margins at all.

As you know, because farmers and ranchers are ultimately price-takers in the market, they are simply unable to pass on added costs as other industries might be able to do.

As such, we believe that any cap and trade program must, at minimum, provide sufficiently robust offset opportunities to individual farmers and ranchers that are adequate to defray any increase in costs, while expressly exempting the agriculture sector from the cap.

Although, from our perspective, commitments of a green economy and jobs should, in fact, entail more than a break even proposition, individual producers should at least be able to expect no net loss of income, whether derived from production or processing, as a result of the pending legislation.

There are also a host of other requisites critical to the agriculture community in connection to this legislation, including but not limited to the administration of the offset program by the Department of Agriculture, the recognition of the sequestration efforts of early actors, the provision of stackable credits, the unlimited ability of producers to participate in an offset program, that sequestration efforts are based on sound science, and the provision of an explicit list of what practices are eligible to serve as offsets.

We also appreciate your ongoing concern over the flawed indirect land use theory and share your strong commitment to correct this discriminatory treatment against biofuels.

Finally, we are deeply troubled by the legislation's formula for determining the allocation of allowances which we believe will result in disproportionate and exorbitant electricity rate increases for residents of many States.

While the foregoing enumerates key concerns we have regarding the legislation as approved by the Energy & Commerce Committee, given the complexities of the legislation and the pace in which it is moving, the process may well uncover other considerations of equal importance to the agriculture community that would also need to be addressed.

Again, we thank you for your strong leadership in ensuring that America's farmers and ranchers and our nation's rural communities are not singled out to bear an increased or even disproportionate burden under climate change legislation.

Sincerely,

Doug Albin
President
Minnesota Corn Growers Association

Mark Williams
President
Southwest Council of Agribusiness

Cc:

Hon. Tim Walz
Hon. Mike Conaway
Hon. Randy Neugebauer
Hon. Henry Cuellar



MISSOURI FARM BUREAU FEDERATION

P.O. Box 858, 701 South Country Club Drive, Jefferson City, MO 65102 / (573) 893-1400

May 28, 2008

(To House Delegation)

As you may know, our organization is very concerned about the direction of climate change discussions both in the United States Congress and the Environmental Protection Agency (EPA). Missouri Farm Bureau (MFB) opposes the cap and trade bill, H.R. 2454, approved by the House Committee on Energy and Commerce last week and we ask you to oppose the measure as it continues through the legislative process.

"Skeptical" and "apprehensive" may understate our members' feelings toward proposed legislation and regulations to reduce man's supposed impact on the earth's climate. Whether it is called global warming or global climate change, we have serious reservations about lawmakers and regulatory officials imposing sweeping new regulatory requirements and costs on the U.S. economy while it is business as usual in China, India and other countries emitting large quantities of greenhouse gases (GHGs).

Titled "The American Clean Energy and Security Act of 2009," the committee-passed bill mandates reductions in carbon emissions through a cap and trade program, establishes a Federal renewable electricity standard, sets new energy efficiency standards and puts in place other requirements under the banner of mitigating climate change and advancing clean energy. The text considered by the Committee was dubbed a compromise by Representatives Henry Waxman and Ed Markey, sponsors of H.R. 2454, because some revisions were made in the legislation before it was marked-up. Calling it a compromise is a misnomer from our perspective because the needs and concerns of agriculture have yet to be thoroughly vetted by lawmakers.

The American Farm Bureau Federation (AFBF) has repeatedly expressed opposition to a carbon tax and said a cap and trade program should be voluntary. Moreover, any legislation designed to reduce carbon emissions should be based on sound, peer-reviewed science and be formulated in a manner that the costs of such a program do not outweigh the benefits. These core principles were shared with the Energy and Commerce Committee prior to the mark-up.

Several amendments were offered in full committee last week to address concerns raised by the agriculture sector. The Farm Bureau-supported amendments would have: a) classified nuclear energy as a renewable energy source; b) prohibited EPA from using indirect land use in determining lifecycle emissions of ethanol; c) precluded EPA from regulating greenhouse gases under the Clean Air Act; d) delayed implementation of the legislation until China and India agree to similar programs; e) expanded the definition of biomass that would qualify as a renewable energy source; and f) allowed certain early actors to be eligible to provide offsets. Of these, only the "early actors" amendment passed, which means farmers and ranchers already performing carbon reduction or sequestration practices can participate in the offset market if they started after a date to be determined by EPA.

Proponents of climate change legislation have called last week's action "historic." It is historic in the sense that Congress is considering legislation to mandate emissions reductions that in turn will raise fuel, fertilizer and energy costs—which have been at historic highs in recent years—to levels that could make it uneconomical to raise food and fiber. And without a defined, realistic, and affordable source of energy to "plug the hole" when fossil fuel usage drops, the pitfalls of not having a comprehensive energy policy that utilizes traditional, renewable and alternative energy sources produced and harnessed in the U.S. will only worsen.

American agriculture has much at stake in this debate, as does every American as a consumer of food and energy. As discussions continue on Capitol Hill, we urge you to share with your colleagues the concerns raised by our organization. For your information, enclosed is MFB's recent five-part series of editorials framing the climate change debate and our policy positions. If you have any questions, please do not hesitate to contact Garrett Hawkins or me at (573) 893-1408.

Sincerely,



Charles E. Kruse
President

SD Farm Bureau


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South Dakota Farm Bureau

NEWS RELEASE

For Immediate Release

April 6, 2009

For more information, contact:

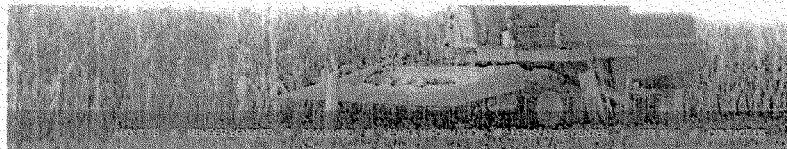
Michael Held (605) 353-8051
Scott VanderWal (605) 627-5479
Cap and Trade Program causes concerns for American agriculture

Climate-change legislation recently introduced in Congress establishing a cap-and-trade system to help offset greenhouse-gas emissions raises many concerns for U.S. farmers. South Dakota Farm Bureau president, Scott VanderWal from Volga, says that "Agriculture will certainly be at the table as cap-and-trade is discussed, but it will be difficult for farmers and ranchers to come out ahead financially."

All indications are that energy and fertilizer prices would increase significantly under a cap-and-trade program. Those cost increases would far outweigh any benefit landowners receive from selling carbon credits. "The President promised no tax increases for most Americans, but a cap-and-trade system would be a monstrous tax increase in disguise that would affect every person in the country who uses energy," said VanderWal. "In addition, we don't know if this legislation would do anything to slow or reverse climate change anyway. I strongly suspect that, in the end, a cap-and-trade system will not pass the cost/benefit analysis."

American Farm Bureau Federation chief economist Bob Young said that the legislation could hurt farmers in the long term. He pointed to concerns about lower farm income, increased costs of production, and higher food costs. The legislation could lead to the collapse of carbon markets for landowners participating in carbon sequestration efforts. In addition, expanding the use of natural gas to produce electricity would drive up the cost of natural gas and the cost of nitrogen. "This will kill the nitrogen production industry in the U.S.," Young said, as farmers would then have to rely on more expensive nitrogen imports.

Nebraska Farm Bureau News Releases



NEWS RELEASES

NEBRASKA FARM BUREAU OPPOSES CLIMATE CHANGE BILL

Lincoln, Nebraska (May 21, 2009) – Nebraska Farm Bureau strongly opposes the American Clean Energy and Security Act (H.R. 2454), which would cap the amount of carbon-based emissions from certain sectors of the U.S. economy. Keith Olson, president of Nebraska Farm Bureau said May 21:

"What this means for agriculture is higher input cost on the farm or ranch. While most businesses are able to pass those increases off to consumers, farmers and ranchers are unable to do that and would simply take the hit. This piece of climate change legislation ignores the complex needs of Nebraska's very diverse agricultural industry," Olson said.

The overall goal of the bill currently moving through the House Energy and Commerce Committee, seeks to cap U.S. greenhouse gas emissions with a reduction of 83 percent by the year 2050. Companies with excess emission permits could then trade them off to other companies – something that is currently being done on a voluntary basis.

"Over the past several years, farmers have been voluntarily collecting carbon credits because of their improved agricultural practices, such as no-till cropping and methane digesters that have reduced emissions from the agricultural sector," said Jordan Pies, National Affairs Coordinator.

Also, under the bill, generators would be required to generate certain amounts of electricity from wind, solar and biomass. The bill sets the number at 15 percent by 2020, plus it requires a reduction of energy use by 3 percent by 2020 through energy efficiency.

"While there would be a direct advantage with its ability to sell carbon credits through conservation on the farm and ranch management practices, however, we continue to be concerned that increases in the cost of energy will outweigh the gain a farmer would have in selling carbon credits. So industries like agriculture would see large cost increases in items such as gasoline, diesel, electricity and fertilizer with little to help offset the costs," Olson said.

Nebraska Congressman Lee Farni, who sits on the House Energy and Commerce Committee, offered two important amendments. The first would exclude agriculture from being regulated under the cap and trade provision. The second amendment would have prevented the Environmental Protection Agency (EPA) from using international indirect land use calculations in determining compliance with

<http://www.nfb.org/news-releases.htm> (accessed 5/21/09 10:45 AM)

Nebraska Farm Bureau • News Release

greenhouse gas emission standards

"We are lucky to have Congressman Terry on this committee. It allows Nebraska to have a voice on this extremely important issue. Even though much of his District encompasses the urban Omaha area, Terry's commonsense approach on this issue will benefit Nebraska agriculture," Rosen said.

"It is important for our leaders in Washington to understand that farmers and ranchers are currently doing a good job in protecting the environment and will continue to leave the land and the air we breathe in better shape for future generations," Davis said.

Reps. Fax To:

NEBRASKA FARM BUREAU

5425 South 10th Street, Lincoln, Nebraska 68512
Telephone: 402-421-4400 • Fax: 402-421-4432

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Site: 8674

May 18, 2009

Honorable Kent Conrad
United States Senator
530 Hart Senate Office Building
Washington, DC 20510

Honorable Earl Pomeroy
United States Congressman
1501 Longworth House Office Building
Washington, DC 20515

Honorable Byron Dorgan
United States Senator
322 Hart Senate Office Bldg
Washington, DC 20510

Honorable John Hoeven
Governor
State of North Dakota
600 East Boulevard Avenue
Bismarck, ND 58505-0001

Dear Sir,

We write to express our concerns regarding the ramifications the climate change legislation now under consideration in Congress will have on agriculture. It appears that climate change legislation could have a disastrous effect in North Dakota by forcing substantially increased costs onto the state's agricultural industry while, at the same time, providing negligible benefits both locally and globally.

The scientific community is divided about whether there is climate change beyond natural variations that have occurred for thousands of years, whether man's activities are a significant cause of these variations, and whether man can substantially alter these variations. But the legislation being discussed makes sweeping changes in energy production, regulation, taxation and cost to business and consumers, based on unproven assumptions and theories.

Here are some examples studies have shown that, by 2030, agricultural fuel costs will increase by 29 percent, fertilizer costs will increase by 28 to 30 percent and electrical costs will increase by 53 percent as a result of proposed climate change legislation. Other studies have shown that such legislation could decrease the U.S. Gross Domestic Product by \$1.7 to \$4.8 TRILLION dollars by 2030, using 2006 dollars. According to an advanced notice of proposed rulemaking for regulating greenhouse gases under the Clean

Air Act released last year, the U.S. Department of Agriculture estimated that "even very small operations would meet the 100-tons-per-year emission threshold" requiring regulation. Undue regulatory burden, coupled with an artificial rise in production costs and a downturn in agricultural prices, will be devastating to North Dakota's number one industry.

It is important to note that agriculture provides a significant net benefit to the climate change equation. According to the Environmental Protection Agency (EPA), in 2006, greenhouse gas emissions from the entire agricultural sector represented only 6.4 percent of the total U.S. greenhouse gas emissions. At the same time, land use, land use change and forestry activities resulted in a net carbon soil sequestration of approximately 14.8 percent of the total U.S. carbon dioxide emissions, or 12.5 percent of the total U.S. greenhouse gas emissions.

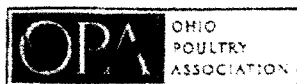
Internationally, U.S. climate change legislation seeks to reach out its enforcement by using trade barriers and restrictions with non-complying nations. As a state dependent on exports, trade barriers and restrictions envisioned by climate change legislation would drastically reduce the competitiveness of North Dakota agriculture on a global scale.

Another troubling issue regarding climate change is the attempt by the EPA to circumvent the will of Congress. EPA's attempt to regulate greenhouse gas emissions through regulation is another example of an agency trying to usurp Congressional authority; such EPA action is a classic case of regulatory creep and has no place in the climate change debate.

North Dakota ranchers and farmers are very concerned about the environment; it is the environment that allows us to make a living. With that said, placing an undue regulatory and cost burden on the state's agricultural industry in a time of recession makes no economic sense. We, the undersigned North Dakota agricultural groups request that you consider all potential consequences as the climate change debate moves forward. In the end, climate change legislation could literally bite the hand that feeds us.

Sincerely,

North Dakota Grain Growers Association
 North Dakota Farm Bureau
 Northern Canola Growers Association
 AmeriFlax
 North Dakota Stockmen's Association
 North Dakota Grain Dealers Association
 North Dakota Soybean Growers Association
 North Dakota Corn Growers Association
 Northern Pulse Growers Association
 North Dakota Wheat Commission
 North Dakota Barley Council



5930 Sharon Woods Boulevard
Columbus, OH 43229
Phone (614) 882-6111
Fax (614) 882-9444

May 20, 2009

The Honorable Henry Waxman
Chairman
House Committee on Energy and Commerce
U.S. House of Representatives
2204 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Waxman:

I write to you on behalf of Ohio's egg, turkey and chicken farmers. The Ohio Poultry association represents nearly 100 percent of the commercial egg and poultry production in Ohio.

My members have serious concerns about the speed with which H.R. 2454, the American Clean Energy and Security Act, is moving through the Energy and Commerce Committee. The bill's cap-and-trade provisions related to carbon emissions has the potential to significantly increase energy and transportation costs for poultry and egg producers and processors at a time when they already are suffering through severe economic hardship.

Our organizations cannot support the bill at this time because we believe there has not been a sufficient analysis of the economic impact it would have on poultry and livestock producers.

Sincerely,

James H. Chakeres
Executive Vice President



59 Greif Parkway, Suite 101 Delaware, OH 43015 740.202.8088

May 20, 2009

The Honorable Bob Latta
U.S. House of Representatives
1531 Longworth House Office Building
Washington, D.C. 20515

Dear Congressman Latta:

I am writing to you today on behalf of thousands of wheat growers in the state of Ohio regarding H.R. 2454, The American Clean Energy and Security Act.

The Ohio Wheat Growers Association (OWGA) has identified several priorities which we believe are critical elements to the agricultural sector within cap-and-trade legislation. In addition, we have worked closely as an industry to compile and identify key principles that have been embraced by a broad cross-section of the agriculture community.

These principles are meant to present our views in a positive and proactive manner in order to assist the committee as deliberations commence. We believe these principles highlight the potential opportunities for production agriculture in a market based cap-and-trade system. For years, wheat growers along with the rest of the industry, have been proactively engaging in conservation practices, such as no till or reduced tillage, which result in a net benefit of carbon stored in the soil. Therefore, we feel strongly that agriculture is part of the solution, not a part of the problem.

Tremendous environmental benefit can be achieved by allowing producers to provide low-cost, real and verifiable carbon offsets. Any cap-and-trade legislation should fully recognize the wide range of carbon mitigation or sequestration benefits that agriculture can provide. Recognition of this should allow farmers to earn the potential revenue from carbon sequestration trading and thus help offset increased input costs as our nation transitions from a carbon based economy.

Upon review of the legislation, we are frankly very disappointed. We see no specific mention of agriculture offsets in the bill. OWGA has serious concerns that, as written, this legislation will significantly increase the cost of production to family farmers. Without the opportunity to generate revenue from greenhouse gas reductions, growers in Ohio will be unable to bear the burden of increased prices for diesel, fertilizer, steel, electricity and all other inputs necessary to provide feed, fiber and fuel for the world.

Finally, unless the deliberations produce legislation that contains significant and substantive changes incorporating the principles and positions we have advocated for, OWGA will be forced to urge members of the Ohio congressional delegation to oppose passage of this bill.



59 Greif Parkway, Suite 101 Delaware, OH 43015 740 202.8088

In closing, it is our sincere hope the committee will take this opportunity to produce thoughtful legislation which recognizes the important role agriculture has in protecting and restoring our environment

Thank you for your time and consideration in this matter of mutual interest and we look forward to working with you to address this critical issue.

Sincerely,

Mark Wachtman

Mark Wachtman
President, OWGA

cc: House Committee on Energy & Commerce



59 Greif Parkway, Suite 101 Delaware, OH 43015 Tel: 740.201.8088 Fax: 740.201.8090

May 20, 2009

The Honorable Bob Latta
U.S. House of Representatives
1531 Longworth House Office Building
Washington, D.C. 20515

Dear Congressman Latta:

I am writing to you today on behalf of more than 20,000 corn growers in the state of Ohio regarding H.R. 2454, The American Clean Energy and Security Act.

The Ohio Corn Growers Association (OCGA) has identified several priorities which we believe are critical elements to the agricultural sector within cap-and-trade legislation. In addition, we have worked closely as an industry to compile and identify key principles that have been embraced by a broad cross-section of the agriculture community.

These principles are meant to present our views in a positive and proactive manner in order to assist the committee as deliberations commence. We believe these principles highlight the potential opportunities for production agriculture in a market based cap-and-trade system. For years, corn growers along with the rest of the industry, have been proactively engaging in conservation practices, such as no till or reduced tillage, which result in a net benefit of carbon stored in the soil. Therefore, we feel strongly that agriculture is part of the solution, not a part of the problem. Tremendous environmental benefit can be achieved by allowing producers to provide low-cost, real and verifiable carbon offsets. Any cap-and-trade legislation should fully recognize the wide range of carbon mitigation or sequestration benefits that agriculture can provide. Recognition of this should allow farmers to earn the potential revenue from carbon sequestration trading and thus help offset increased input costs as our nation transitions from a carbon based economy.

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Finally, unless the deliberations produce legislation that contains significant and substantive changes incorporating the principles and positions we have advocated for, OCGA will be forced to urge members of the Ohio congressional delegation to oppose passage of this bill.

In closing, it is our sincere hope the committee will take this opportunity to produce thoughtful legislation which recognizes the important role agriculture has in protecting and restoring our environment.

For the Future of Farming

ohiocorn.org



59 Grief Parkway, Suite 101 Delaware OH 43015 Tel. 740.201.8088 fax: 740.201.8090

Thank you for your time and consideration in this matter of mutual interest and we look forward to working with you to address this critical issue.

Sincerely,

John Davis

John Davis
President, OCGA

cc: House Committee on Energy & Commerce



*Forging a partnership between farmers and consumers
• Working together for Ohio's farmers •*

May 21, 2009

The Honorable John Boehner
U.S. House of Representatives
1011 Longworth House Office Building
Washington, DC 20515-3508

Dear Representative Boehner:

The Ohio Farm Bureau Federation (OFBF) is the largest general farm organization in the state of Ohio with more than 200,000 members representing all of Ohio's 88 counties. Our members produce virtually every kind of agricultural commodity and are the center strength of the Ohio economy. As a result, OFBF is very interested in the nation's climate change policy.

The Ohio Farm Bureau has worked closely over the last several weeks with congressional offices regarding issues that are critically important to Ohio farmers that we believe must be included in any climate change legislation. Despite the good work by members of the Committee, it is clear the recently released compromise bill will impose enormous constraints on the Ohio economy, including agriculture, resulting in a net cost to farmers across our state. Therefore OFBF strongly opposes H.R. 2454.

Even though the compromise does not include agriculture under the cap, in other respects it utterly ignores the principles OFBF has identified as critical to Ohio agriculture. We have consistently advocated that any cap-and-trade bill must:

- Recognize and support the benefits agriculture can provide.
- Must make economic sense for agriculture.
- Provide for a strong leadership role for USDA.
- Base any carbon sequestration program on sound science.

While some sectors of the economy were accommodated in the legislation, the bill does not address the complex needs of Ohio farmers. In fact, due to the broad nature of H.R. 2454 it is almost impossible to measure and evaluate the bill's full impact on Ohio farms. That said, the bill will clearly increase farm operating costs, including fertilizer prices, and reduce our competitiveness abroad by effectively locking the United States into these changes regardless of what is done by other major agricultural competitors, such as China and India.

This bill does not meet the needs and concerns of Ohio agriculture, and we urge all Members on Congress to reject this approach and oppose H.R. 2454.

Sincerely,

John C. Fisher
Executive Vice President

Cpy. OFBF Board of Trustees, County Farm Bureau Presidents, OFBF Cabinet

280 N. High Street • P.O. Box 182383 • Columbus, Ohio 43218-2383
Phone: 614.249.2400 • Fax: 614.249.2200 • Web site: www.ofbf.org

TEXAS DEPARTMENT OF AGRICULTURE

TODD STAPLES
COMMISSIONER

June 10, 2009

The Honorable Michael Conaway
U.S. House of Representatives
Longworth House Office Building
Room 1527
Washington, D.C. 20515

Dear Representative Conaway:

As the House of Representatives considers H.R. 2454, the American Clean Energy and Security Act of 2009, I want to bring to your attention the significant impact this legislation will have on Texas agriculture. After careful consideration, I have come to the conclusion this bill will offer more harm than benefit to Texas. Protecting our environment is essential. However, adopting a program with speculative benefits such as this will lead to the certain detriment of domestic food and fiber production, is risky at best, and would be yet another blow to an already struggling economy.

I am first and foremost concerned with the significant cost increases associated with the policies proposed in the bill. A recent study commissioned by The Fertilizer Institute demonstrated the effects of a similar bill, S. 2191, showed the proposed policies would significantly increase the input costs for corn, soybeans, wheat, cotton, rice, sorghum, barley and oats. These estimates indicate Texas producers would face an additional \$400 million to \$779 million in input costs. When other Texas agricultural products like livestock, peanuts and hay are included, the impact on Texas will increase significantly. Saddling an industry already facing razor-thin profit margins with these significant cost increases will only serve to force more and more family farms and ranches out of production.

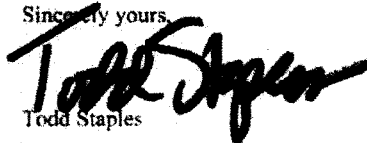
Another concern I have with the proposed legislation is the complete lack of input from the agriculture community. It is undeniable that agricultural production relies on fossil fuels and would face significant hardship under the policies outlined in this bill. While the bill does not include agriculture as a covered industry, the lack of a specific exemption opens the door for its inclusion through the Environmental Protection Agency rulemaking process. Furthermore, the administration has repeatedly stated its intent to roll back the 2008 Farm Bill safety net provisions, approved less than a year ago, in exchange for the potential income from carbon sequestration incentives included in this proposal. Doing so would place the future of agriculture and our nation's food security in

The Honorable Michael Conaway
June 10, 2009
Page 2

an unproven and untested system. Given this desire to substantially rewrite agricultural policy, I am pleased to see the House Agriculture Committee granted jurisdiction over this legislative proposal, and I am hopeful that America's farmers and ranchers will be given a significant seat at the table in developing this proposal, which will greatly affect their daily lives.

As H.R. 2454 progresses through the legislative process, I encourage you to consider carefully its broad implications to our economy. The significant negative impact on Texas agriculture is undeniable, and the benefits are far from assured. Thank you for your service to the State of Texas. If I may be of any assistance, please do not hesitate to contact me.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Todd Staples", written over the typed name.

Todd Staples

TS/CJF/cjf

cc: The Honorable Kay Bailey Hutchison
The Honorable John Cornyn



Producers Association

5405 West Interstate 40 • Amarillo, TX 79106 • 1.888.40.WHEAT
www.texaswheat.org • info@texaswheat.org

June 8, 2009

The Honorable Michael Conaway
11th Congressional District of Texas
1527 Longworth House Office Building
Washington, DC 20515

RE: H.R. 2454 "The American Clean Energy and Security Act of 2009"

Dear Congressman Conaway,

The Texas Wheat Producers Association wants to commend you on your hard work for Texas and Texas agriculture; however, we are adamantly opposed to H.R. 2454, The American Clean Energy and Security Act of 2009, as the bill is written today.

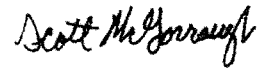
The Texas Wheat Producers Association feels that H.R. 2454 does not meet the complex needs of a very diverse agricultural industry and instead raises the cost of energy, placing an enormous burden on the wheat producers of Texas. All producers would face higher input costs for fuel and fertilizer if the bill were to be passed as is.

While U.S. agriculture accounts for less than 10% of the total carbon emissions according to the United States Department of Agriculture, H.R. 2454 dismisses the need for farmers to be compensated for altering their soil management practices in order to help reduce greenhouse gas emissions. This eliminates the opportunity for producers to sell resulting emission cuts as a carbon credit.

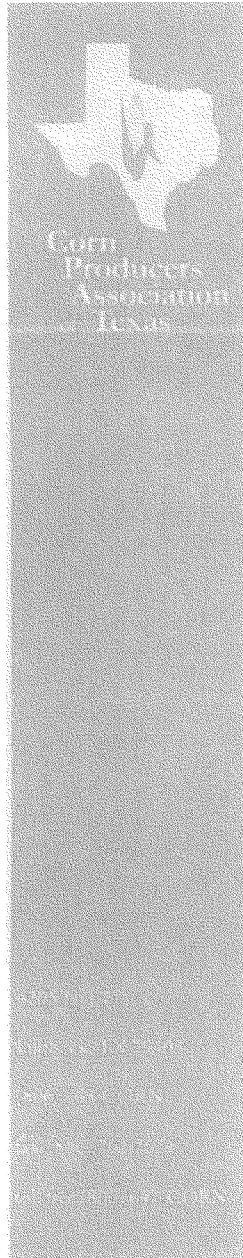
Lastly, the Texas Wheat Producers Association opposes H.R. 2454 because it would effectively lock the U.S. into any changes that take place regardless of what is done by our overseas competitors. This defeats a unilateral purpose of reducing greenhouse gas emissions and could have a damaging effect on the U.S. economy by sending more jobs overseas instead of keeping them here at home.

Overall, H.R. 2454 does not meet the necessary needs for Texas agriculture to survive and be competitive. We urge you, your colleagues and other members of Congress to vote "No" should H.R. 2454 come to the House floor in its present form.

Sincerely,

A handwritten signature in black ink that reads "Scott McGarraugh". The signature is written in a cursive, flowing style.

Scott McGarraugh
TWPA President



May 21, 2009

Dear Chairman Peterson and Ranking Member Lucas:

We would like to express our sincere appreciation for all you do to help better agriculture in our country. You have always been great supporters of the American farmer and we applaud you for your hard work and dedication to the industry.

At this time, we feel it is important to voice our concern on the cap and trade issue that has recently been discussed. This is a very important issue to our members and depending on the final legislation, could be very detrimental to them.

We are unable to commit our support or opposition to any particular legislation at this time since the details are constantly changing. We are very concerned that some of the wording being submitted would potentially increase costs of production and force changes on our farms that would affect all farmers negatively. We want you to know of our desire to be involved in any way possible. As further discussions continue, we would like to make ourselves available to give comments on any legislation that goes forward.

Please do not hesitate to contact us with any questions or concerns.

Thank you.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bart Thoreson", is written over a faint, larger version of the same signature.

Bart Thoreson, President
Corn Producers Association of Texas

cc: The Honorable Randy Neugebauer, The Honorable Mike Conaway, The Honorable Henry Cuellar

We urge you to vote "NO" if HR 2454 (the Waxman-Markey cap-and-trade bill) makes it out of the House Energy and Commerce Committee. Texas Grain & Feed Association represents over 400 member firms involved in the grain processing, storage and handling business in the state, from the small country elevator to large export terminal and feed and flour mills across the state. We recently heard from our State Comptroller that the pending legislation could mean the loss of thousands of jobs in Texas alone.

Specifically, we urge you to assess carbon trading that involves any kind of land idling scheme. This would seriously impact rural communities and the competitiveness of Texas Agriculture as compared to other countries that aren't being regulated in this fashion. We want to make sure that any cap and trade program will not allow large emitters to buy large tracts of farm acreage, taking it out of production to satisfy their requirements for carbon offsets.

According to one of our national organizations, grain elevators and feed mills likely would not reach the carbon-emission levels currently being considered by Congress that would trigger coverage under a carbon-reduction program. But that doesn't mean such sectors would not be affected adversely. Grain, feed and feed ingredient manufacturing, grain processing, biofuels and grain-exporting sectors are significant users of energy and already are incurring increasing electricity and transportation costs to run operations and ship commodities and products to domestic and international markets. A recent study by Oklahoma State University found that electricity costs for grain handlers have increased 19 percent over the last five years, a trend that is expected to continue. Further, these agricultural businesses have incurred dramatically higher costs from increased financing needs and market volatility. These cost pressures can affect farm prices negatively and exacerbate concentration in agribusiness as firms become uncompetitive.

Major (energy) cost increases (expected under a climate-change bill) undoubtedly would hit grain, oilseed, feed and biofuels companies very hard, particularly because of the large geographical expanse that most commodity and agricultural product shipments must traverse. Those transportation cost increases inevitably would be passed back to producers through lower farmgate prices, given the limited ability to pass those costs forward in a highly competitive global market.

Any approach to climate change needs to be cost-effective, maintain the competitiveness of U.S. industry, be predictable, allow for sufficient transitioning, offer identifiable and measurable benefits and be conducted in concert with similar efforts by key foreign-country competitors.

Given the magnitude and complexity of the climate-change issue, we support a deliberate, conscientious effort by Congress to carefully scrutinize a carbon-reduction program's impact on the domestic and global grain-, food-, feed- and biofuels-production industries, as well as the resulting impact on consumers and recipients of humanitarian food assistance. Whatever the makeup of the final approach (to address carbon emissions), it must not negate the competitive advantages in technology, transportation

and infrastructure enjoyed by U.S. agriculture.

We urge the United States to play a leadership role in a global effort on carbon-emissions reductions, rather than taking a unilateral approach that may have a limited overall impact in reducing such emissions and trigger innumerable damaging, unintended consequences. Please feel free to contact us if you have any questions. Thank you for your work on behalf of our Great State!

Sincerely,

TEXAS GRAIN & FEED ASSOCIATION

Ben Boerner, CAE
President

FAX TO:

FAX NO.: 13256552255

May 20 2009 02:59PM P1



TEXAS SHEEP & GOAT RAISERS' ASSOCIATION

P.O. Box 3298 • San Angelo, Texas 76902
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President
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Sonora

First Vice President
Marvin Shirley
Sonora

Second Vice President
Lee W. Bucklett
San Angelo

Executive Secretary
Sandy Whitley
San Angelo

FAXED TO: 202 225-1783

May 20, 2009

Honorable Mike Conaway
U. S. House of Representatives
1527 Longworth House Office Bldg.
Washington, DC 20515

Dear Congressman Conaway:

It is our understanding House Energy and Commerce Committee has released its global climate change bill that would establish a cap-and-trade program to reduce greenhouse gas emissions. We further understand that the Committee may be voting on this legislation today with the goal of reporting the legislation to the full House by May 22, 2009.

On behalf of the over one thousand ranching families making up the Texas Sheep & Goat Raisers' Association, I wish to advise that we are wholeheartedly against the bill and question the need for quick passage of such far-reaching and controversial legislation.

We have heard time and again that production agriculture would benefit from this proposal, however, it is now clear that production agriculture does not stand to gain but will instead suffer dramatic increases in costs of production and will see its ability to compete effectively with imported products from foreign countries drastically weakened. There is certainly a consensus among agricultural groups that the legislation would lock the U.S. into huge changes regardless of what is done by other countries whose standards are not nearly as high as ours.

All segments of the U.S. economy are currently struggling under a burden of government-mandated programs with very little knowledge of the ultimate cost of those programs. When you add the costs of bailing out banks, mortgage companies, the auto industry and possibly the state of California, it is only prudent to vote this bill down until we see valid indications that some of the other "stimulus items" are working. Agriculture is at the mercy of the vagaries of weather, and most of Texas is currently still in the grip of a long drought. Passing this bill would cause undue hardship to producers who have fed and clothed this nation and many of the world's people for generations.

So-called experts predict that energy prices under cap-and-trade will increase anywhere from 15% to 125%. The wide range of predicted prices is an indication that the experts actually have no real idea what cap-and-trade will do to energy prices.except that they will go UP! Higher energy prices trickle quickly through the U.S. economy, meaning producers will pay more for everything they need to operate.

If we are to find a solution to climate change, we must focus on incentives, innovation and research and not on taxes and government mandates. The farmers and ranchers of this great country are good stewards whose efficient and consistent production methods provide America with low cost food and fiber. Congressman Conaway, we reiterate that we are opposed to the proposed cap-and-trade legislation and ask that you actively oppose it as well.

Sincerely,

Lee Bloodworth
LEE BLOODWORTH
President

L.B:sw



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	BOBBY NEDBALEK Senior

P.O. Box 2669 • Waco, Texas 76702-2689 • 254-772-3030

May 20, 2009

Congressman Michael Conaway
U. S. House of Representatives
1527 Longworth HOB
Washington, DC 20515-4311

Dear Congressman Conaway:

The Texas Farm Bureau opposes passage of the Waxman/ Markey legislation, H.R. 2454 as introduced. We are greatly concerned that this measure, even as modified by the manager's amendment, would impose enormous costs on the agricultural sector, and we hope you will consider the factors below as Congress moves forward in consideration of Climate Change legislation.

Any climate change bill, by its nature, will impose costs on the economy. Only the agricultural and forestry sectors can deliver offsets under a cap-and-trade program that are low-cost, available immediately, and available in quantities sufficient to bridge the gap until technological change can be implemented. According to the USDA, agriculture and forestry have the potential to reduce 15-25 percent of U.S. greenhouse gas emissions. Offsets from these industries also create other benefits, such as reducing other air pollutants and improving water quality. H.R. 2454 fails to articulate the central role that agriculture and USDA can play in promoting such offsets.

We believe that Climate Change legislation must: recognize and support the benefits agriculture can provide; be cost beneficial for agriculture producers; provide for leadership in the USDA; and base any carbon sequestration program on sound science. Furthermore, we would respectfully suggest the House Agriculture Committee is best suited to address these and other concerns of the industry regarding the future role of agriculture.

We appreciate your consideration of this request, and look forward to working with the Congress in its efforts to make this nation energy independent.

Sincerely,

Kenneth Dierschke
President

KD:SP:cjg

June 18, 2009



**TEXAS
CATTLE
FEEDERS
ASSOCIATION**

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info@tcfa.org
www.tcfa.org

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Mike Engler
Chairman-Elect

Bo Kizzier
Vice Chairman

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Bill Rose
Jack Scoggins, Jr.
Dale A. Smith
Warren White
Richard A. Winter

The Honorable Collin C. Peterson, Chairman
House Committee on Agriculture
1301 Longworth House Office Building
Washington, DC 20515

The Honorable Frank D. Lucas, Ranking Member
House Committee on Agriculture
1305 Longworth House Office Building
Washington, DC 20510

Dear Chairman Peterson and Ranking Member Lucas:

Texas Cattle Feeders Association (TCFA) is opposed the "American Clean Energy and Security Act of 2009" (H.R. 2454). We are extremely concerned about the predicted increases in energy and other business costs that may result from the bill, a weak offsets section and the fact that producers have not had adequate time to fully analyze the very real and significant effects the voluminous bill would have on their businesses.

TCFA members are responsible environmental stewards who respect and care for the land, air, water and animals that are fundamental to sustaining their way of life. Our members are very concerned, however, about the effects this bill could have on the costs of fuel, electricity, feed, fertilizer, equipment and other inputs necessary to maintain a cattle operation. Economists have estimated that H.R. 2454 would cause farm income to drop anywhere from \$8 billion in the short term to \$50 billion long term. Cattle producers have suffered significant economic setbacks lately, and if these estimates are close to being accurate, this bill would very likely put many operations out of business. TCFA simply cannot support a bill that would cause this kind of economic devastation.

In addition, agricultural producers were told all along that we would be able to generate income by producing offsets to sell to regulated sectors of the economy. H.R. 2454 does not deliver on these promises.

Finally, there has not been adequate time to study the bill and understand all the effects it could have on cattle producers and the U.S. economy. When Congress considers a bill of this magnitude and economic importance, careful analysis and deliberation is essential. We urge Congress to slow the process, carefully analyze the bill and make certain everyone understands its significance. Without sufficient forethought and careful consideration, further action on this legislation could be economically devastating.

Cattle producers will continue to work every day to protect and improve the environment so that they and future generations will be able to continue to live off the land and feed our nation, but TCFA must oppose any bill that could cause financial ruin to our members.

Sincerely,

Ross Wilson
President & CEO



"Improve the economic well-being of agriculture and enrich the quality of farm family life."

May 20, 2009

The Honorable John Shimkus
U.S. House of Representatives
2452 Rayburn HOB
Washington, DC 20515-1320

Dear Congressman Shimkus:

Illinois Farm Bureau is writing to oppose H.R. 2454, the American Clean Energy and Security Act, and urge that you cast a "no" vote in committee later this week.

Farm Bureau members are watching the process unfold and are concerned that the Waxman-Markey bill ignores the contributions agriculture can make in a cap-and-trade system. In its 900-plus pages, there is no mention of the U.S. Department of Agriculture or any program of carbon capture or sequestration that involves agricultural crops or forestry.

Even EPA has suggested that at least 15 percent of U.S. carbon dioxide emissions could be captured relatively inexpensively in the U.S. agriculture and forestry sector.

We continue to be concerned that this bill will increase the costs of our energy-related inputs without any opportunity to pass them along. Our members continue to be concerned that any unilateral effort to control emissions in the U.S., will hand our international competitors a distinct advantage in one of the few economic sectors where our nation enjoys a trade surplus.

As our members weigh the pros and cons of any bill, they will carefully examine whether it makes economic sense for agriculture. At this time, H.R. 2454 doesn't.

Sincerely,

ILLINOIS FARM BUREAU®

Philip Nelson



ILLINOIS AGRICULTURAL ASSOCIATION®

1701 Towanda Avenue • P.O. Box 2901 • Bloomington, Illinois • 61702-2901
Phone: 309.557.2111 • Fax: 309.557.2559 • www.ilfb.org



**Ohio Rural
Electric Cooperatives, Inc.**

June 19, 2009

The Honorable John Boehner
U.S. House of Representatives
1011 Longworth House Office Building
Washington, D.C. 20515-3508

**Also sent to all of the
Ohio Congressional Delegation**

Dear Representative Boehner:

The Ohio Farm Bureau Federation (OFBF) is the largest general farm organization in the state with more than 234,000 members representing all of Ohio's 88 counties. The Ohio Rural Electric Cooperatives, Inc. (OREC) represents the 25 independently owned and operated electric cooperatives serving nearly 400,000 consumers in 77 of Ohio's 88 counties.

OFBF and OREC have worked closely with congressional offices and committee staff in identifying issues and principles that are critically important to rural Ohio and which we believe must be included in any climate change legislation. We appreciate the willingness of many offices and members to hear our concerns on this important matter. Our organizations want to lessen impacts and create opportunities for rural Ohioans.

However, upon review, it is clear that the interests of our members were not adequately addressed during committee mark-up, and we write to notify you of our unified current opposition to HR 2454, the American Clean Energy and Security Act of 2009, as reported by the House Energy and Commerce Committee.

Some sectors of the economy seem to have been accommodated as the legislation was crafted, yet the bill ignores the complex needs of rural America. Specifically, rural residents are disproportionately affected by the bill and are more vulnerable to energy cost pressures than their urban and suburban counterparts. We remain concerned over the impact the bill will have on the affordability of all forms of energy, including electricity, and other inputs essential to the rural economy.

The bill contains so many policy mandates that its impact on rural America is difficult to evaluate, but our organizations are certain that it will increase our operating costs and for our farmers, reduce our competitiveness abroad.

We look forward to continuing our efforts to provide constructive input on the debate surrounding this highly controversial bill. We remain more than willing to continue to share our ideas for advancing federal climate policy; a goal we believe can be achieved without harming the farm economy, impairing rural development and penalizing rural consumers of energy.

Sincerely,

John C. Fisher, Executive Vice President
Ohio Farm Bureau Federation

Anthony J. Ahern, President and CEO
Ohio Rural Electric Cooperatives, Inc.

Copy: Senator George Voinovich and Senator Sherrod Brown

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA

Let's face it: as anyone familiar with agriculture knows, farming is an energy-intensive business with high costs and low profit margins. So when the price of diesel, electricity, or natural gas goes up, farmers really feel the pinch. So it's not surprising that a significant portion of the agricultural community opposes cap-and-trade, the purpose of which is to raise prices on the energy that farmers use.

Now if cap-and-trade achieved its intended effect—that is, to prevent a global climate catastrophe—then farmers would be the first to sign up and help. Farmers are practical people; when they see a problem, they want to fix it, case closed.

But if you're asking them to assume an enormous economic burden for a meaningless exercise, one that subsidizes the coasts at the expense of the heartland; one that sends American jobs and taxpayer dollars to India and China; one that puts American farmers at a disadvantage in the global marketplace—all for no impact whatsoever on global warming, then you'll get an earful. And rightly so.

What do I mean here? Well, as EPA Administrator Lisa Jackson admitted to me last week, if the U.S. chooses to enact cap-and-trade unilaterally, without China, India, and other developing nations, which emit a significant portion of the world's greenhouse gases, then farmers would be forced to pay for a solution that doesn't work. Farmers understand what this means: it's all pain for no climate gain.

Now one thing I'll note about farmers: they are great stewards of the land. Farmers have partnered with the Federal Government to improve and protect thousands of acres of agricultural lands. But they are rightly leery of cap-and-trade because the supposed environmental benefits its supporters claim it will create are an illusion.

They are also skeptical of cap-and-trade's alleged economic benefits. Over the last several months, cap-and-traders, in a desperate attempt to reverse the inexorable decline in public support for the Waxman-Markey bill, have claimed that cap-and-trade will create economic opportunities for farmers.

They say that farmers can make a hefty profit by taking advantage of so-called "offsets." These projects allow farmers to undertake certain agricultural practices, such as no-till farming, to keep CO₂ in the ground, and get paid for them. But as farmers have discovered these projects won't fully defray the increased energy costs and the devastating macroeconomic impacts caused by cap-and-trade.

According to the Heritage Foundation, farm income could drop by \$8 billion under cap-and-trade—and offsets will make up less than 10 percent of this lost income. And many farmers, like fruit, vegetable, rice and cotton farmers, will not be able to participate in an offset program because their crops are simply not suitable for no-till or other practices to sequester CO₂ in soil. They will simply be stuck with significantly higher energy costs.

Also consider a report by the Congressional Research Service, which recently confirmed that new EPA estimates of the potential for agricultural soil sequestration (no-till or other practices) are "significantly lower than EPA 2005 estimates." In plain English, this means that the most viable tool for producing offsets—soil sequestration—won't be available for farmers in the amounts promised by cap-and-trade supporters.

I learned a good deal of this from the letters sent by 120 agricultural groups opposing the Waxman-Markey bill. The opposition, I should note, runs the gamut of the agricultural sector, including: the Farm Bureau, the Pork Producers Council, the USA Rice Federation, the National Cattlemen's Beef Association, the National Chicken Council, the Council of Farmer Cooperatives, American Meat Institute, and the North American Millers Association. I could go on and on but reading the list could take up the entire hearing. So I ask that these letters be added into the record.

What's clear to farmers is that cap-and-trade is bad for business and meaningless for the environment. It raises prices, destroys jobs, and hits farm economies in the heartland. What farmers need, and what the Nation needs, is an energy policy that makes energy clean, affordable, and reliable, and one that increases the energy we can produce right here at home.

Senator BOXER. Thank you, Senator.

Let me see, my list here, by order of arrival, next would be Senator Alexander.

**OPENING STATEMENT OF HON. LAMAR ALEXANDER,
U.S. SENATOR FROM THE STATE OF TENNESSEE**

Senator ALEXANDER. Thank you, Madam Chairman.

Welcome to our witnesses.

A lot of the prosperity of the United States of America has depended on two things: cheap energy and cheap food. That has helped us have a high standard of living, create jobs, and have the most productive agriculture operations in the world.

We are here over the next several days to have hearings, and I appreciate the Chairman having these on the effects of climate change and global warming. I am one Senator who believes climate change is a problem and that humans are causing it, and that we need to deal with it.

I think the House-passed bill, though is exactly wrong. It is a \$100 billion job killing national energy tax that will add another utility bill to every American family, and no American families need, I mean, farmers are the first people who don't need another utility bill because, as Senator Inhofe said, farming is one of the most energy-intensive operations we have. And every time you add utility bills or costs to existing utility bills, prices go up.

I mean, when the price of gasoline goes up, so does the price of seed and feed, and operating all the machines on the farm. And the cap-and-trade program deliberately raises the price of gasoline. Its purpose is to raise the price of energy.

If the price of electricity goes up, a lot of the machines that go on the farm cost more to operate. If the price of natural gas goes up, and we saw it just about 4 years ago go up, farmers all over America felt the pain of the high fertilizer costs, and that increased the costs of their operations.

And of course, all that increases the cost of food to all of Americans. Setting aside land makes land more scarce, which is a part of this plan. And that raises the cost of food. When gasoline goes up, it costs more to haul the food to the wholesaler, and then to the retailer. Sara Lee, a big food processing operation in Tennessee that employs 2,000 people said if this House-passed bill passes, that they will delay their expansions because the cost of food is up.

So I think we need to stop and think about whether it is really the wisest price and policy to try to attack climate change by deliberately raising the price of energy, especially this cap-and-trade that came from the House is like if you have a fly swatter right in front of you, and there is a fly and you use a noodle to try to get it. The cap-and-trade effect on fuel is about the most inefficient way you could deal with fuel because it deliberately raises the price of gasoline, for example, without reducing the carbon.

We have had that testimony before this committee. A better way to deal with carbon from fuel would be a low carbon fuel standard as people switch to electric cars or to biofuels or other things, not deliberately raise the price of gasoline.

So there is a better way to do all this. Yesterday, I offered a blueprint for 100 new nuclear power plants in the next 20 years. Republican Senators have proposed 100 new nuclear power plants in the next 20 years. That is the cheap energy solution. I mean, high cost energy such as that from Waxman-Markey would send jobs

and food producers overseas in looking for cheap energy to create products and to create food.

So 100 new nuclear power plants, support for electric cars, offshore exploration, and doubling energy R&D for renewable energy, that is the low cost plan to deal with climate change instead of a new utility bill for every American family.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much, Senator.

Our next speaker is Senator Bond.

**OPENING STATEMENT OF HON. CHRISTOPHER S. BOND,
U.S. SENATOR FROM THE STATE OF MISSOURI**

Senator BOND. Thank you very much, Madam Chair, and thanks to the witnesses for coming today. It is a timely hearing because just yesterday I received a disturbing report that the proposed cap-and-trade legislation will cost the average Missouri farmer up to \$30,000 per year.

Now, we have long suspected that higher energy prices from cap-and-trade will hurt farmers with higher production costs. In President Obama's own words, electricity prices will necessarily skyrocket under cap-and-trade.

As has been said, farmers use energy in just about everything they do. Diesel fuel powers tractors and combines. Natural gas is the key ingredient to making fertilizer and drying grain. Farm equipment uses energy also for irrigation pumps, as well as transportation.

A new report by the Food and Agricultural Policy Research Institute at the University of Missouri—Columbia, along with the Iowa State University details how there would be tens of thousands of dollars of cost, and I ask, Madam Chair, that this be included as a part of the record.

Senator BOXER. Sure. Will do.

[The referenced report was not received at time of print.]

Senator BOND. After examining farm production costs at representative farms across the State, we found that Waxman-Markey would drastically increase farmer costs. A representative farm in Missouri, a 1,900-acre feed grain, soybean farm in Lafayette County east of Kansas City, would face \$11,649 in higher energy costs in 2020, rising to \$30,152 in 2050. There would be higher costs for seed, fertilizer, chemicals, custom hire and rental, machinery, fuel, drying and irrigation energy, machinery repairs and operating interests.

I can only tell my colleagues here on the committee, many of whom come from the coast and may not be familiar with farm costs, that \$11,000 rising to \$30,000 per farm is a jaw dropping number for farmers. Forcing farmers to pay this amount for cap-and-trade would be a bit more than the postage stamp we were told earlier. It would be unconscionable.

Some say that cap-and-trade is an opportunity that will benefit farmers, but those claims are popping as quickly as they are made. The Des Moines Register said plans to cut greenhouse gas emissions have been sold to farmer groups as a potential cash cow for growers, but new government estimates suggest farmers would make a lot less money than previously believed.

And as the Ranking Member pointed out, the CRS said a particular concern to many in U.S. agriculture is EPA's current estimates of the mitigation potential from agricultural soil activities such as conservation and no-till are shockingly low, only about 10 percent of EPA's estimates.

Some suggest that big carbon gains are to be had from planting trees. Now, I am a big fan of planting trees. I have planted over 10,000 trees by hand on some land in Mexico, Missouri, including about 200 Asian-American chestnuts. And as a side note, if anybody wants to fight global warming, I will give you some information on where you can acquire my trademark seedlings and make a little cash on the side.

But I can tell you, as a commercial proposition, a Missouri nursery quoted us a price of \$1,200 per acre to plant eastern cottonwood trees, ideal for the Lafayette County farm we talked about. But planting the trees would cost over \$2 million. Farmers would then earn, assuming a 2.6 ton per acre sequestration rate, at \$28 a ton of carbon, only \$75 in sequestration revenues for the \$1,200 per acre cost.

Now, otherwise a farm would make \$750 per acre. So no farmer will figure that that pencils out to lose \$675 for what they could get.

So I will, Madam Chair, I will submit the rest of my statement for the record, but I can tell you that this cash cow is really a pig in a poke.

More details later.

[The prepared statement of Senator Bond was not received at time of print.]

Senator BOXER. Senator, I look forward to those details because you were so unclear on where you stand.

[Laughter.]

Senator BOXER. I just want to place in the record at this time a document that shows the top four agriculture States. They are California, Texas, Iowa and Nebraska. I just want to place that in the record to clear up something that was said about the coast.

[The referenced document was not received at time of print.]

Senator BOXER. All right.

Senator BOND. You can plant trees, you can plant chestnuts in—

Senator BOXER. Well, actually, Senator, if you want to go over the details of this, California sells 11.4 percent of all the agricultural production. That is well over Texas, which is second at 7.1 percent. So if you want to come to California, come with me and visit my farmland and visit. We have everything from dairy farmers to, you know, 200, 300 different specialty crops.

I think it is important that the facts be clear that the No. 1 agricultural production State is California, a State I know well and love very much.

Senator Barrasso.

Senator BOND. I agree with you. I am just sorry. I don't want to see your agriculture crippled.

Senator BOXER. Well, I think our agricultural people will speak for themselves through Senator Feinstein and myself, and the 52

or 53 other Representatives they have. But thank you for offering to speak for them.

Senator Barrasso.

**OPENING STATEMENT OF HON. JOHN BARRASSO,
U.S. SENATOR FROM THE STATE OF WYOMING**

Senator BARRASSO. Thank you very much, Madam Chairman.

The Waxman-Markey bill may create green jobs. It may even create green jobs in the agriculture sector. If it does, great. We need green jobs in my State. Wyoming welcomes the possibility of them.

But this Waxman-Markey bill also costs jobs, and Americans want all jobs, not just some. They don't want to lose the jobs they have with the promise that they may get a green job in exchange in the future.

The Administration says the Waxman-Markey bill will create millions of new jobs. This Administration also promised that after we passed the economic stimulus package, we would create or save 3.5 million jobs. Well, since the passage of that bill, unemployment has reached 9.5 percent. Last month, 467,000 people lost their jobs.

The Administration's economic expert said that the unemployment would not exceed 8 percent. It has by a lot. Were they wrong? You bet. Vice President Biden acknowledged Administration officials were too optimistic earlier this year when they predicted the unemployment rate would peak at 8 percent. Vice President Biden said the Administration "misread the economy."

Well, is it possible that the Administration is also misreading the economic predictions of millions of new jobs being created in this bill? The Administration failed to make the grade on the \$787 billion stimulus package. It is a fact that this legislation will cost jobs in our economy. That is why there is language in the bill to retrain workers who lose their jobs. Where will those job losses come from?

Well, according to Robert Murray, who is Chairman, President and CEO of Cleveland-based Murray Energy Corporation, all Americans in the Midwest, South and Rocky Mountain regions will be the most dramatically affected because the climate change legislation will destroy the Nation's coal industry, and low-cost electricity is what provided for these regions for generations. He goes on to say wealth will be transferred away from almost every State to the West Coast and New England.

I believe that Waxman-Markey will create some jobs and will destroy many others. There won't be a net job creation in my State and many rural States with economies tied to the mineral industry and dependent on fossil fuels such as coal and natural gas. Jobs will be lost under this legislation, jobs in my State, jobs in other rural States dependent on fossil fuels.

And we need more jobs in all 50 States. We need to keep the ones we have. Americans want all of these jobs and more. We need them all.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much.

Senator Crapo.

**OPENING STATEMENT OF HON. MIKE CRAPO,
U.S. SENATOR FROM THE STATE OF IDAHO**

Senator CRAPO. Thank you very much, Madam Chairman. And I appreciate the opportunity to be here today to discuss these critical issues.

I share the concerns of my colleagues about the impact of the cap-and-trade legislation on agriculture and forestry. Although it is very clear that there are offsets that can be achieved and utilized—and I want to talk about those in just a moment—but I think it is important that we not let this legislation and its implementation turn into a mechanism to force certain planting or operating decisions that may not be beneficial to particular agricultural or forestry operations.

As I indicated, as we study this bill, I have become increasingly concerned that the costs of cap-and-trade will outweigh the benefits to foresters and farmers. Agriculture is an extensive energy industry, and for some crops energy inputs account for as much as 70 percent of the cost of production. And my concerns are that these input costs under the cap-and-trade such as gasoline, diesel and electricity will increase and surpass the uncertain monetary benefits from the offsets.

Additionally, increases in the cost of natural gas will result in higher fertilizer prices. And to put it in perspective, in 2008 farmers and ranchers spent \$60 billion on fuel, electricity, fertilizer and chemicals.

I look forward to the testimony that is going to be provided today. I am very focused this morning on issues relating to the forestry piece of this issue, as well as the agriculture side of it. Responsibly managed domestic forests have a golden opportunity in this legislation to participate in reduction of greenhouse gases. And although I indicated I have very big problems with the legislation, I think we have to look at the issues of projects like afforestation and reforestation and avoid the deforestation of forests across America.

And additionally, wood products that harness carbon should be eligible for participation in the offsets market.

Madam Chairman, because domestic forests are ideal participants in reducing global warming pollution, I am a little disappointed that today don't have a witness from the forestry industry to explain the benefits and the challenges of domestic participation in this emerging market.

I do have some comments that have been provided by the Alliance of Forest Owners, the National Alliance of Forest Owners, and would ask if the Chairman would allow me to submit their comments for the record so the committee can have the benefit of their input on this issue.

Senator BOXER. Absolutely. Without objection.

Senator CRAPO. Thank you very much.

[The referenced document follows:]



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**Statement of the National Alliance of Forest Owners
Senate Committee on Environment and Public Works
Hearing entitled, "Economic Opportunities for Agriculture, Forestry Communities,
and Others in Reducing Global Warming Pollution."
July 14, 2009**

I. Introduction

The National Alliance of Forest Owners (NAFO) is pleased to submit comments to the Senate Committee on Environment and Public Works as it considers climate change legislation. NAFO is an organization of private forest owners committed to promoting Federal policies that protect the economic and environmental values of privately-owned forests at the national level. NAFO membership encompasses 75 million acres of private forestland in 47 states. NAFO members are well positioned to help our nation in the development of approaches that utilize private working forests, and the products they produce, as a critical tool in fashioning solutions to climate change.

To provide some context, forests in the United States, nearly 60 percent of which are privately owned, sequester almost 200 million metric tons of carbon (CO₂) each year,¹ offsetting about 10 percent of annual U.S. emissions from burning fossil fuels.² According to the Environmental Protection Agency (EPA), this amount represents 84 percent of the carbon sequestered by all land uses.³ An appropriately crafted offset system that accounts for the sequestration and storage capabilities of responsibly managed working forests and harvested wood products in an industrial emissions offset

¹ US Environmental Protection Agency. 2007. *Inventory of U.S. greenhouse gas emissions and sinks: 1990-2005*. EPA 430-R-07-002.

² Birdsey, R., K. Pregitzer, and A. Lucier. 2006. Forest carbon management in the United States: 1600-2100. *J. Environmental Quality* 35: 1461-1469.

³ US Environmental Protection Agency. 2007. *Inventory of U.S. greenhouse gas emissions and sinks: 1990-2005*. EPA 430-R-07-002.

marketplace can play a significant role in helping the nation address greenhouse gas (GHG) emissions, and do so in a way that reduces the overall cost of achieving mandatory emissions reduction targets. The essential elements of a national climate change policy that appropriately incorporate the contributions of working forests are outlined in Section V below.

I. Responsibly managed private forests play a key role in sequestering carbon.

The basic proposition that responsibly managed forests play a critical role in sequestering carbon is beyond dispute. The EPA, in considering approaches to address climate change, has recognized that responsibly managed forests are considered one of five key "groups of strategies that could substantially reduce emissions between now and 2030."⁴ Similarly, the Intergovernmental Panel on Climate Change (IPCC) report on mitigation technologies highlights forest management as a primary tool to reduce GHG emissions.⁵ Indeed, the IPCC contends that, "[i]n the long term, a sustainable forest management strategy aimed at maintaining or increasing forest stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the greatest mitigation benefit."⁶ The following graphic illustrates this work (the "IPCC Managed Forest Graph"):⁷

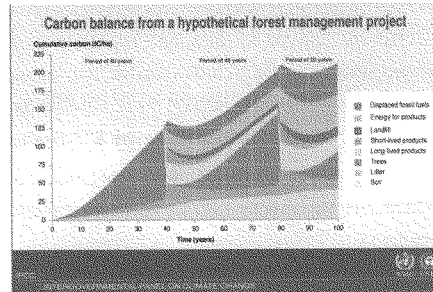
(see chart on next page)

⁴ Regulating Greenhouse Gas Emissions Under the CAA, 73 Fed. Reg. 44,354, 44,405 (July 30, 2008).

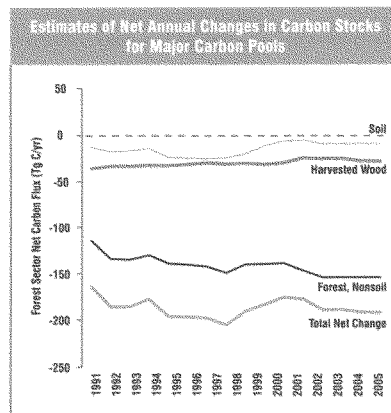
⁵ *Id.* at 44,405-06.

⁶ Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, page 543.

⁷ Climate Change 2001: Mitigation. Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Technical Summary, Section 4.1, Figure TS-6 (2001).



Private forests in the United States are already a valuable and multifaceted tool in the effort to reduce U.S. greenhouse gas emissions and remove carbon dioxide from the atmosphere. As the following EPA chart demonstrates, managed forests and harvested wood products in the United States provide a significant carbon sink:



EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006.⁸

⁸ Available at USEPA #430-R-08-005, <http://www.epa.gov/climatechange/emissions/usgginventory.html>.

As EPA has explained, "[o]verall, forestry, land use and land-use change activities are considered "sinks," absorbing carbon dioxide from the atmosphere through a process known as carbon sequestration. In 2006 these activities resulted in removing 883.7 MMTCO₂e (240.8 MMT Carbon) from the atmosphere."⁹ Despite these impressive figures, as described below there are significant further opportunities for forests to contribute to an offset system through the sequestration and storage of greater amounts of carbon.

II. A successful market based mechanism for controlling GHGs must consider the opportunities provided by responsibly managed forests.

A climate change program focused on reducing GHG emissions through market mechanisms that generate credits should include offsets from responsibly managed domestic forests and harvested wood products.

Private forests long have been recognized as a source of real, verifiable reductions in GHGs. Most established GHG trading regimes credit forestry activities. For example, trading platforms and registries that recognize forest management include the Chicago Climate Exchange ("CCX") and the Voluntary Carbon Standard ("VCS"). The Regional Greenhouse Gas Initiative ("RGGI") and the Western Climate Initiative ("WCI") both intend to consider forest management offsets in the very near future.¹⁰ NAFO is cautiously encouraged that the California Air Resources Board has initiated work by the Climate Action Reserve (CAR) to revise its forest project protocol to encourage greater participation by managed forest owners. NAFO is also participating with a broad array of U.S. and Canadian stakeholders to develop an international forest project standard for measuring carbon from forest projects that will be compliant with

⁹ EPA Technical Support Document for Stationary Sources at 39 (June 2008).

¹⁰ In contrast, the United Nation's Clean Development Mechanism ("CDM"), does not allow credits for forest management but limits credits to afforestation or reforestation. This approach has produced very few projects in the forestry area due to unnecessary restrictions in the program. By comparison, the Voluntary Carbon Standard, a global consortium dedicated to improving standards and programs for offsets, has proposed potential standards for forestry management.

the requirements of the American National Standards Institute (ANSI) and its Canadian counterpart.

Given the scope of emissions reductions that can result from improved forest management both domestically and in developing countries, it is important that managed forests and harvested wood products play a role in future national and international offset programs. Generating credits from responsibly managed forests and harvested wood products, and allowing the trading of such credits, affords both regulators and industry significantly greater flexibility in determining how to achieve overall net GHG reductions.

For example, while it may not be economically or technologically feasible for a utility to reduce its GHG emissions for several years, acquiring forest offset credits could have the dual benefit of helping the utility achieve compliance in an economically efficient way until it can enact its own GHG controls while also encouraging strong long-term forest management practices that lead to further GHG reductions in the future. In this way, forests provide an extraordinary opportunity to create a multi-faceted national program that promotes both immediate and sustainable long-term GHG reductions.

Importantly, under appropriately constructed policy, the forest sector could be in a position to immediately participate in an offset program, thus helping ensure the successful start-up of a market oriented mechanism. Promoting policies that encourage emitters to work voluntarily with the private forest sector to offset their GHG emissions will enable the nation to attain emission goals in a cost-effective manner and at the earliest opportunity.

NAFO recognizes that no protocol or registry is perfect. However, that should not distract from the role that responsible forest management and harvested wood products can play in reducing GHG levels and the greater flexibility they offer to achieve net GHG reductions in a cost-effective manner. Policies should seek to encourage and credit such benefits when seeking to achieve GHG reductions economy wide.

III. A broad range of forest management activities are available for inclusion in an offset system.

Managed forests in the United States present a clear opportunity to reduce atmospheric CO₂ and mitigate GHG emissions. Available forest management activities that can aid in reducing greenhouse gas emissions include afforestation, reforestation, conservation and the production of harvested wood products. Research on private forestlands has shown that more intensively managed forests and the products they produce can sequester and store as much as 150 percent more tons of carbon per acre than less intensively managed forests.¹¹

Products like building materials, furniture and other consumer goods made of wood harvested from working forests also are an important means of storing carbon over long periods. The EPA estimates that the amount of carbon stored annually in forest products in the United States is equivalent to removing more than 100 million tons of CO₂ from the atmosphere every year.¹² Independent studies show that wood products used in building construction store more carbon and use less fossil fuels than other materials, such as steel and concrete. Wood framing in a home, for example, produces 26 percent less net CO₂ emissions than steel and 31 percent less than concrete.¹³

IV. A sound offset system that promotes forest markets will enhance the carbon benefits of private forests over time.

NAFO's members represent more than 75 million acres of private forest lands covering every region of the country. These forests are managed according to state-

¹¹ *Carbon Sequestration in Californian Forests: Two Case Studies in Managed Watersheds* by Dr. Cajun James, Dr. Bruce Krumland, and Dr. Penelope Jennings Eckert, December 12, 2007. http://www.spi-ind.com/html/forests_research.cfm

¹² US Environmental Protection Agency. 2007. *Inventory of U.S. greenhouse gas emissions and sinks: 1990-2005*. EPA 430-R-07-002.

¹³ Perez-Garcia et al. *The environmental performance of renewable building materials in the context of residential construction*. Wood and Fiber Science CORRIM Special Issue 37:3-17.

based water quality best management practices, state forestry regulations and standards, third party certification programs and contracts and agreements that ensure long-term forest renewal and strong environmental protection. At the same time, forest owners depend on economically viable markets for products and services to continue making investments in good stewardship and to maintain working forests on the landscape over the long term.

An offset policy that supports existing markets and promotes new and emerging markets for forest carbon will help maintain and strengthen the forest land base over time, thereby continuing its contributions toward reducing nationwide GHG levels. This includes the development of new sources of domestic renewable energy, such as electricity from forest biomass and cellulosic biofuels that take advantage of the carbon mitigation benefits of forests to help maintain a low carbon economy.

V. NAFO has several suggestions for inclusion in any national climate change policy.

Based on our experience in forest management and the forest products sector, the following should be included in any national climate change policy:

- **The U.S. Department of Agriculture should serve the key role with respect to agricultural and forestry offset projects.** The USDA has critical expertise to bring to the development of methodologies and processes for crediting offset projects in the agriculture and forestry sectors. Indeed, Congress already recognized such a role for the USDA in last year's Farm Bill. Like Section 2709 of the Food, Conservation, and Energy Act of 2008, climate change legislation should place primary responsibility on USDA to establish technical guidelines and regulations to assess offsets from forest projects, including approving eligible project types, establishing project protocols and certifying specific projects.

- **Climate change legislation must identify eligible offset projects at the outset.**

The initial years of a cap and trade system will be critical to the long term success, and a vigorous and vibrant source of offsets is necessary to implementation during these critical early years. These include forest management activities that increase carbon stocks, harvested wood products, afforestation and reforestation and avoided deforestation. Any offsets program should be open, inclusive and establish a level playing field for all project types.

- **Offset provisions should ensure early offset availability.** To ensure that offsets are available during the outset of the cap-and-trade program, any climate legislation must give offset project developers as much early guidance and certainty as possible so they can attract investment and develop projects in time for the first compliance periods. Congress should direct relevant agencies to begin developing regulatory frameworks immediately, should significantly shorten the deadlines for action for developing such regulations and should streamline various other procedures to make offsets available as soon after enactment as possible. Legislation also should fully encompass offsets generated by well established programs.

VI. Conclusion

NAFO appreciates this opportunity to provide input on the important opportunities private working forests provide to reduce atmospheric concentrations of GHGs. Working forests work to sequester carbon and are undisputed in serving as a critical carbon sink. In order to be effective, any market based mechanisms for controlling GHGs must incorporate working forests and the broad array of management activities associated with them. This will enhance the carbon benefits provided by working forests and better enable our nation to achieve its overall climate change objectives.

NAFO looks forward to further discussions with this Committee and other policy makers in the Senate as work progresses on comprehensive climate change legislation.

Senator CRAPO. Madam Chairman, again I look forward to the witnesses' testimony and to the information we will be provided today. I do have the strong concerns that I indicated about whether this legislation will, in the end, result in a higher cost, rather than a benefit to the agriculture and forestry industries, but I am willing to listen to the witnesses and see if we can find a way to create a win-win situation for everyone.

Thank you, Madam Chairman.

[The prepared statement of Senator Crapo follows:]

STATEMENT OF HON. MIKE CRAPO,
U.S. SENATOR FROM THE STATE OF IDAHO

Madam Chairwoman, thank you for the opportunity to share a few words. I would also like to thank the witnesses for being here with us today to share your testimony on including agriculture and forestry in reducing emissions.

For many in agriculture and forestry, carbon offsets represent opportunities to obtain more value out of the land and new land management technologies in addition to the possibilities of reducing the costs of a cap-and-trade program. Agriculture and forestry offsets are already contributing financially to some farms and private forestry operations through no-till, anaerobic digesters and other carbon sequestration techniques. Estimates from EPA indicate that 20 percent of all greenhouse gas emissions in the U.S. can be sequestered in agriculture and forest lands.

In the 2008 Farm Bill, Congress recognized the potential for farms and forests to participate in providing ecological services to society through the creation of the Office of Ecosystem Services and Markets at USDA. OESM is working to establish technical guidelines for the measuring, reporting and registration of the environmental services provided through various land management practices. I understand USDA's testimony today will touch upon these issues, and I look forward to hearing this testimony.

Responsibly managed domestic forests have a golden opportunity to participate in the reduction of greenhouse gases. Through projects like afforestation, reforestation, and avoided deforestation, forests across America can participate in offsets markets. States like Idaho, with unnaturally large fuel loads, are ideal locations for carbon sequestration through forest health projects that result in net carbon sequestration. Additionally, wood products that harness carbon should be eligible for participation in the offsets market.

Because domestic forests are ideal participants in reducing global warming pollution, I must express my disappointment in not having a witness today from the forest industry to explain the benefits and challenges of domestic participation in this emerging market. This hearing would have provided a perfect opportunity for this committee to learn more about the opportunities that we have here in the U.S. to care for our forests and to improve our air quality. In lieu of a witness, I would like to ask unanimous consent to include the National Alliance of Forest Owners' (NAFO's) testimony in the record so that the committee has the opportunity to more thoroughly review this issue from the perspective of domestic forestry.

While offsets can potentially benefit our farmers and foresters, I have some major concerns with the overall effect of cap-and-trade legislation on these industries. For example, it is important that legislation and implementation do not turn into a mechanism to force certain planting or operating decisions that may not be beneficial to a particular agriculture or forestry operation.

Lately, I have become increasingly concerned that the costs of cap-and-trade will outweigh the benefits to farmers and foresters. For example, I have heard that some crops like potatoes and certain specialty crops are not suitable for no-till or other farming practices that sequester carbon in the soil. I also worry that livestock producers will be unable to feasibly purchase and utilize anaerobic digesters, which carry a price tag of \$2 million–\$3 million.

Agriculture is an energy intensive industry. For some crops, energy inputs account for 70 percent of production costs. I have major concerns that input costs under cap-and-trade such as gasoline, diesel, and electricity will increase and surpass uncertain monetary benefits from offsets. Additionally, increases in the cost of natural gas will result in higher fertilizer prices. To put it in perspective, in 2008, farmers and ranchers spent \$60 billion on fuel, electricity, fertilizer and chemicals.

I look forward to the testimony outlining the benefits to farmers and foresters of cap-and-trade, but I also would like to ensure this committee engages in a well rounded discussion of the costs associated with cap-and-trade as well. We all know

that for farmers and foresters to be able to assist with reducing emissions, they must be able to remain on the land.

Senator BOXER. Yes. We are going to start hearing from the witnesses, and if any colleagues on either side of the aisle come to this hearing, we will give them 3 minutes to make a statement.

We are going to first hear from Jeffrey Hopkins, Principal Adviser, Energy and Climate Policy, Rio Tinto. And for those people who don't know, Rio Tinto is one of the world's largest mining companies, and it has operations in the following States: Colorado, Wyoming, Montana, Utah, Michigan, Arizona, California, Vermont, Kentucky.

And from what we understand, they have had a corporate climate policy since 1998. So all these predictions of gloom and doom, we are glad you are here, and we would love to know how you are doing these past years as you have implemented such a policy.

And welcome, sir.

**STATEMENT OF JEFFREY W. HOPKINS, PRINCIPAL ADVISER,
ENERGY AND CLIMATE POLICY, RIO TINTO**

Mr. HOPKINS. Thank you.

Madam Chair and members of the committee, Rio Tinto greatly appreciates the opportunity to testify today. My name is Jeff Hopkins, and I am Principal Adviser on Climate and Energy Policy for Rio Tinto, the largest diversified mining company in the U.S. and one of the largest diversified mining companies in the world.

Our U.S. assets include coal holdings in Colorado, Wyoming and Montana; copper in Utah; copper projects in Michigan and Arizona; borates in California; and talc in Montana and in Vermont; as well as an aluminum smelter in Kentucky; with over 15,000 U.S. employees, all told.

Our objective is to be the resource developer of choice from the mineral exploration phase to mine closure and beyond. Rio Tinto's climate position recognizes and accepts the conclusions of the Intergovernmental Panel on Climate Change. Emissions of greenhouse gases resulting from human activities are contributing to climate change, and reducing these emissions is an important international goal.

At all levels of our company, we carry out a three-part strategy for achieving this goal. First, we encourage all governments to take action to reduce emissions. In the U.S., this is exemplified by our participation in the U.S. Climate Action Partnership, or USCAP, a group of 25 businesses and five NGOs that released its Blueprint for Legislative Action last January.

Second, we take a proactive stance at our own operations to reduce greenhouse gas emissions.

Third, we develop low-emission pathways for our products, which include many commodities with positive greenhouse gas reduction benefits in use, but which are energy and greenhouse gas intensive in production.

Offsets, the subject of today's hearing, play an important role in this strategy. I will be happy to tell you how. But first, what is an offset? An offset is a reduction in greenhouse gas emissions from an unregulated—that is to say an uncapped—entity, which can be marketed to a regulated entity. That is what an offset is.

Offsets are potentially sold by regulated entities such as entities with farm or forest land use emissions to regulated entities, such as Rio Tinto, that have an obligation to purchase and submit an allowance for each ton of greenhouse gas emissions.

For some perspective, the recently passed House bill proposed to regulate about 85 percent of U.S. emissions, leaving 15 percent of emissions unregulated and potentially available to supply offsets, including reductions from agriculture and forestry land use emissions.

Because climate change is mitigated equally by reductions from regulated or unregulated sectors, the contribution of offsets from unregulated sectors is in all senses equivalent to reductions in greenhouse gas emissions from regulated sectors.

Offsets bring several additional economic advantages as well. First, reductions in unregulated sectors could come at a much lowered cost in the immediate term than reductions from regulated sectors, resulting in some very narrow direct benefits and some very broad indirect benefits. Entities using cost-efficient offsets will directly benefit by reducing their own emissions and their overall compliance costs. And the entities selling the offset, including agriculture and forest communities, will directly benefit as they harvest the market value of that reduction.

Those who are on the sidelines to this transaction will indirectly benefit as well because entities choosing to substitute offsets for allowances bring down the price of allowances for everybody. As a result, allowing entities in the CAP sector to pursue lower cost reductions wherever they exist will enable us to progress farther and faster toward stabilizing global GHG concentrations.

The recently passed House bill would allow up to 2 billion tons of domestic and international offsets to enter into the system each year, with up to 1 billion tons of offsets from domestic sources and up to 1 billion tons from international sources.

U.S. EPA analysis of this bill showed that the impact of the 1 billion tons of international allowances alone works to reduce the prevailing cost of allowances by 89 percent. This demonstrates why Rio Tinto and USCAP call for ample offsets to contain the costs of climate regulation.

Additional benefits include that international offsets create a funding mechanism for emission reductions in countries without carbon regulation.

Senator BOXER. I am going to ask you to summarize.

Mr. HOPKINS. OK.

We do not plan to meet our emission reductions solely through the use of offsets, and we will first look toward our own abatement opportunities. We will never be a carbon neutral business due to our energy-intensive nature, supplying essential minerals and metals that meet societal needs and which contribute to improvement in living standards globally. We are determined to deliver shareholder value. Offsets and the cost containment they bring are a crucial part of this overall strategy.

Thank you.

[The prepared statement of Mr. Hopkins follows:]

**Testimony of Jeffrey W. Hopkins
On behalf of Rio Tinto**

Before the Senate Environment and Public Works Committee

**Hearing on Economic Opportunities for Agriculture, Forest
Communities, and Others in Reducing Global Warming Pollution**

July 14, 2009

Madame Chair and members of the Committee, Rio Tinto greatly appreciates the opportunity to testify today. My name is Jeff Hopkins, and I am a principal adviser on energy and climate policy for Rio Tinto, the largest diversified mining company in the US, and one of the largest diversified mining companies in the world. Our US assets include coal holdings in Colorado and the Powder River Basin of Wyoming and Montana, copper in Utah, copper projects in Michigan and Arizona, borates and talc in California and Vermont, and an aluminum smelter in Kentucky. We have [] employees in these and other states. We work hard to be the resource developer of choice, from the mineral exploration phase to mine closure and beyond.

Rio Tinto has had a climate change policy position since 1998, further revised in 2003, which recognizes and accepts the conclusions of the Intergovernmental Panel on Climate Change that emissions of greenhouse gases (GHGs) resulting from human activities are contributing to climate change, and acknowledges that reducing these emissions is an important international goal. Our corporate strategy for achieving this goal involves three basic tenets. First, we encourage governments in all the jurisdictions in which we operate to take action to reduce emissions. In the US this is exemplified by our participation in the US Climate Action Partnership (USCAP), a group of 25 businesses and five NGOs that last January released its *Blueprint for Legislative Action*. Second, we take a proactive stance at our own operations to reduce greenhouse gas emissions. Our thresholds for new investments take into consideration the eventuality of US and global agreements to reduce GHGs thereby ensuring our projects are developed in such a way that they will earn a fair return even in a carbon-constrained world. Third, we develop low emissions pathways for our products. Many of our products, such as

copper, aluminum, uranium, and borates, have positive GHG emissions attributes over their life cycle but nearly all are energy-intensive in production. Our thermal coal production is used in electricity generation, and emits high levels of carbon in use, but when paired with carbon capture and storage technology will allow for a drastic decarbonization of US and other global electricity supplies.

The committee might ask how our attention to policy advocacy with governments, improving our own energy efficiency, and reducing the life-cycle emissions of our products fit with offsets, the subject of today's hearing.

But first, what is an offset?

An offset is a reduction in GHG emissions from an unregulated (i.e. uncapped) portion of the economy. Simply put, a cap and trade bill would require all regulated sources to submit allowances for their emissions, in order to demonstrate compliance with the regulation. There are a fixed number of allowances (the number of allowances is equal to the cap) and an offset purchased from an uncapped sector can be used in place of an allowance for compliance purposes. Because radiative forcing is mitigated equally by reductions from capped or uncapped sectors, the contribution of offsets to reducing overall GHG concentrations is in all senses equivalent to reductions from capped sectors. Reductions in uncapped sectors may be at a lower cost allowing for a more economically efficient emissions reduction. Entities that use offsets serve themselves, by buying a cheaper form of abatement, and serve the whole by relieving pressure on scarce allowances under the cap.

In HR 2454, a bill whose passage Rio Tinto supported and which we hope to continue to improve through the Senate, emissions levels for most of the US economy (84 percent, according to the US EPA) will be regulated by the cap and will, therefore, face a price signal that incentivizes emissions reductions. Offsetting mechanisms create a price incentive to reduce emissions in the non-capped portion of the economy, including agricultural and forest land use activities. International offsets create a funding

mechanism for emissions reductions in countries without carbon regulation, which would otherwise have little incentive to reduce their own emissions, even though these reductions may be relatively cost-effective. Allowing entities in the capped sector to pursue lower-cost reductions wherever they exist will enable us to progress farther and faster towards stabilizing global GHG concentrations. HR 2454 would allow up to two billion offsets to enter into the system, and the presence of these offsets is estimated to reduce the cost of allowances by 89 percent, compared to the case in which only domestic offsets, but no international offsets, are allowed. The US EPA analysis of HR 2454 demonstrates why Rio Tinto and USCAP call for ample offsets to contain the costs of climate regulation. Our objectives to improve energy efficiency at our operations and lower the lifecycle emissions of our products allow us to pursue and capture incremental gains, but the aggressive long-term targets contemplated in the US, the EU, Australia, and Canada absolutely require scalable abatement technologies including carbon capture and storage, which is pre-commercial and not likely to contribute significant amounts of abatement before 2020. Meeting short-term targets, such as the 17 percent reduction by 2020 in HR 2454, will require reliance on a broad portfolio of technologies, including renewable energy sources, some fuel switching, energy efficiency, and ample supplies of offsets, including offsets from domestic and international agriculture and forestry.

Rio Tinto has an offset strategy that is consistent with other Rio Tinto policies. We believe that trading emission reduction credits within jurisdictions in which we operate will deliver maximum value to the company. We hope to develop offset projects related to our core activities or our sustainable development objectives, including our commitment to Net Positive Impact on Biodiversity in the areas where we operate. We further hope to monetize these emission reductions, as well as purchase offsets, in order to reduce our overall compliance costs. We do not plan to meet our emission reductions solely through the use of offsets, and we will first look towards our own abatement opportunities where they are feasible and viable. Due to the energy-intensive nature of our business – supplying essential minerals and metals that meet societal needs and which contribute to improvement in living standards globally – we will never be a *carbon*

neutral business but we are nonetheless determined to find ways to continue to deliver shareholder value in a carbon constrained world.

In summary, we commend the Committee for its attention to the matter of offsets and their impact on overall compliance costs. We have several detailed suggestions on how to improve the legislation compared to the House-passed version (see Appendix). One area that I will highlight is that offset provisions attracted considerable attention in the days leading up to passage of HR 2454. However, this discussion largely was focused on concerns over who will regulate the supply side of the offset market rather than the demand side where we will mostly operate. From our perspective, we have yet to find any areas of disagreement regarding the regulation of offset quality. In particular we, and those organizations with which we speak with most often, agree that offsets need to be of the highest quality and have the strongest levels of oversight. In fact, we broadly agree on the operational definitions of quality criteria that would be used to assure that offsets will be real, verifiable, permanent, and additional to baseline emission levels. Rio Tinto sees delay and incompatibility across multiple country jurisdictions as the chief threats to a workable and effective offset regime, and encourage Congress to direct the Administration to work with international partners to develop offset protocols and regulations to assure the demand side that ample offsets will be available early on in any climate regulation scheme and will be consistent with clean development mechanism and successor agreements.

Other areas where we believe work is needed include enhancing the ability of the strategic allowance and offset reserve program to prevent price spikes, as well as strengthening the applicability of the forest carbon provisions. We look forward to working with the entire committee to further improve the bill and pledge to continue to cooperate with this Committee and others as they complete their work.

Appendix: Rio Tinto Recommendations to Improve the Offset-Related Provisions of HR 2454

These suggestions are offered in the spirit of improving the efficiency without damaging the environmental intent of the program.

1. Section 726 strategic reserve uses an ineffective formulaic (60 percent of rolling average price) approach to control allowance price volatility.
Problem: Formulaic approach will not address problems related to a dash to gas, when high allowance prices encourage excessive fuel switching and contribute to natural gas price spikes that are damaging to the rest of the economy.
Solution: Give an independent body discretion to release reserve (offsets first, then future allowances if necessary) to flatten price spikes, in particular those that encourage excessive fuel-switching in electricity generation
2. Section 811 does not allow uncapped methane stationary sources to qualify as offsets; EPA modeling shows that this would increase domestic offset capacity by 45 percent and reduce overall compliance costs.
Problem: Methane from coal seams and landfill sources are likely to be regulated outside of the cap under a new source performance standard (Section 811), a very lengthy process with an unknown outcome.
Solution: Instruct the Administration to develop protocols for reducing methane emissions from coal, allowing them to contribute to emissions reductions in the near term.
3. Section 722.d.1. The low limits on offsets will increase overall compliance costs
Problem: Increase ability to exceed the current offset limit of 2 billion tonnes.
Solution: Direct the offset integrity board and administrator for domestic agriculture and forestry programs to establish high-quality protocols for offsets.
4. Section 722.d.1.B 'applicable percentage' limit on offset use reduces compliance flexibility for covered entities, increasing their own costs and the costs of the overall program for everybody.
Problem: A pro-rata, firm-level percentage limit on offset use will bind both aggregate and many firms' offset behavior in ways that reduce the overall use of offsets and raise the costs of the program.
Solution: Allow entities to transfer and use any surplus remaining in their 'applicable percentage' limit to other covered entities.
5. Section 743 puts in place a requirement that all international offsets require a bilateral agreement with the US.

Problem: Negotiating these agreements will be a lengthy process at the same time that international climate negotiations are occurring.

Solution: The provision already requires EPA assurance that such projects meet the same rigor as reductions from the capped and uncapped US domestic sectors; country agreements aren't necessary. Rather, our international efforts should be focused on identifying project types, such as the forestry sector emissions reductions, that can readily contribute to filling offset pipelines.

6. Section 722.d.1.B puts in place a discount factor for international offsets after 2018, such that a covered entity must hold 1.25 credits to equal 1 allowance.

Problem: The provision will discriminate emissions reductions by country of origin, reducing the overall effectiveness of the program to reduce costs and encourage international cooperation.

Solution: Eliminate the discount placed on international allowances.

Question from Senator Crapo:

I. In your testimony, you referred to the US EPA Analysis of H.R. 2454, the American Clean Energy and Security Act to demonstrate why offsets are important. EPA's analysis of H.R. 2454 stated that without international offsets, which can equal up to 1.5 out of 1 billion tons of CO₂ in ACES, the costs of allowances would increase 89% as compared to the core scenario.

Do you think it is possible to have enough offsets internationally to keep your costs low?

How does your company intend to utilize domestic offsets?

Answer:

It is clearly possible to have enough international offsets to keep our costs low, and developing constructive regulatory and oversight policies to accompany a mandatory GHG reduction program in the US will go far to improving the likelihood of realizing these low-cost abatement possibilities. The most important step that Congress can take here, as recommended in the USCAP Blueprint for Legislative Action, is to direct the Administration to certify forest carbon tonnes, including avoided deforestation, as offsets. Offset certification for forest carbon tonnes is a necessary step for bringing these low-cost abatement opportunities forward. The Blueprint then calls for a standards-based approach to be established for domestic and international offsets within 18 months, including clear categories of offsets that qualify, clear procedures for certification, and guidance for offset providers regarding how these standards can be met.

Rio Tinto believes that trading emission reduction credits within the countries where we operate will deliver maximum value to the company by reducing overall compliance costs. The same can obviously be said for others with compliance responsibilities, and will deliver maximum value to the countries where we operate. In terms of how Rio Tinto plans to use domestic offsets, we hope to develop domestic offset projects related to our sustainable development objectives, including our commitment to Net Positive Impact on Biodiversity in the areas where we operate. Our focus on Net Positive Impact on Biodiversity is part of our effort to be the resource developer of choice, from the exploration phase through to mine closure and beyond. We will look first, however, to implementing cost-effective internal abatement opportunities before resorting to the use of offsets.

I hope that this is useful for you. Please do not hesitate to contact us with any additional questions.

Senator BOXER. Thank you. That summed it up well, I think.
 We are going to hear from Senator Sanders, followed by Senator Merkley. Both these Senators are running back and forth to the Health Committee, so we really appreciate their taking the time. Three minutes each, gentlemen, if you can.

**OPENING STATEMENT OF HON. BERNARD SANDERS,
 U.S. SENATOR FROM THE STATE OF VERMONT**

Senator SANDERS. Madam Chairman, thank you very much.
 And that is exactly right. We are doing the markup on health care right now, so I am preoccupied there.
 Let me just read a brief statement and thank all of our panelists for being here.

Vermont is a unique State in many ways and benefits from being 75 percent forested, with more than 4.6 million acres of forests. Vermont also benefits from having a strong agricultural sector representing more than 1 in 10 jobs in our rural economy. Perhaps, then, it is no surprise that whether you measure per capita or on total carbon output, Vermont is also the State with the lowest carbon footprint in the United States.

We need to ensure that the lessons learned from States like Vermont that have been leaders in early action on energy efficiency and environmental preservation are applied to global warming legislation. One way to achieve greenhouse gas emissions reductions is through our lands and our farms, and that is especially true when so many family farmers around this country are facing very serious economic problems. We can and should provide flexible incentive programs to landowners and farmers to achieve tangible greenhouse gas emissions reductions through recognized practices.

We know that preserving forests or reforestation can sequester carbon dioxide emissions. We also know that there are ways to capture farm emissions. In Vermont, our farmers are working to capture methane emissions from cows by using farm waste to generate electricity. That is just a very, very exciting technology. I was at a farm last year in Addison County, and seeing the methane gas being produced from manure providing electricity for hundreds of homes, just a very exciting technology.

While offsets will offer an opportunity to engage the forestry and agricultural sectors in emissions reductions, we should provide funding for targeted incentive programs that help small farmers and landowners who may not be engaged in carbon trading but can play a valuable role in helping our Nation meet and exceed our greenhouse gas emissions reduction targets.

I look forward to working with my colleagues to make this happen. The bottom line is: let's not forget about family based agriculture in America. They can and should play a major role as we combat global warming.

Thank you very much, Madam Chair.

[The prepared statement of Senator Sanders follows:]

**STATEMENT OF HON. BERNARD SANDERS,
 U.S. SENATOR FROM THE STATE OF VERMONT**

Vermont is a unique State in many ways and benefits from being 75 percent forested with more than 4.6 million acres of forests. Vermont also benefits from having a strong agricultural sector representing more than 1 in 10 jobs in our economy.

Perhaps then it is no surprise that whether you measure per capita or on total carbon output, Vermont is also the State with the lowest carbon footprint in the Nation.

We need to ensure that the lessons learned from States like Vermont—that have been leaders in early action on energy efficiency and environmental preservation—are applied to global warming legislation. One way to achieve greenhouse gas emissions reductions is through our lands and farms. We can and should provide flexible incentive programs to landowners and farmers who achieve tangible greenhouse gas emissions reductions through recognized practices.

We know that preserving forests, or reforestation, can sequester carbon dioxide emissions. We also know there are ways to capture farm emissions. In Vermont, our farmers are working to capture methane emissions from cows by using farm waste to generate electricity.

While offsets will offer an opportunity to engage the forestry and agricultural sectors in emission reductions, we should provide funding for targeted incentive programs that help small farmers and landowners who may not be engaged in carbon trading but can play a valuable role in helping our Nation meet and exceed our greenhouse gas emission reduction targets. I look forward to working with my colleagues to make this happen.

Senator BOXER. Senator, thank you so much for coming over.
Senator Merkley.

**OPENING STATEMENT OF HON. JEFF MERKLEY,
U.S. SENATOR FROM THE STATE OF OREGON**

Senator MERKLEY. Thank you very much, Madam Chair.

I think the title for today's hearing is very appropriate, Opportunities for Agriculture and Forest Communities, because there are substantial opportunities here as they relate to offsets and the practices employed in both sectors.

Certainly, I wanted to focus a little bit on the forestry sector. At a recent event, our Majority Leader, Senator Harry Reid, called Nevada "the Saudi Arabia of solar power," and then Senator Dorgan stood up and said, well, North Dakota is the Saudi Arabia of wind power. And if I was to continue that analogy, Oregon would be the Saudi Arabia of forest biomass.

And indeed, we have a tremendous amount of carbon sequestering potential, and the management of our forest lands currently may be one of the worst possible practices in which we have millions of acres of second growth overgrown in a fashion which results in a lower level of carbon being captured in terms of the growth rate, but also a very high propensity to burn down, which puts all that carbon back in the atmosphere.

So I want to make sure that we have through this bill the opportunity to recognize that those practices can be modified in ways that could be very, very helpful. But to have it work in the long term, and this applies to the agricultural world as well, we have to have a high level of integrity in the models that we are using for calculating the impact on carbon dioxide with a long-term view. And we have to have some type of insurance structure that maintains that if, in fact, we modify these practices and then this unit of forest, if you will, burns in a forest fire, that we capture those effects in the course of it.

So I really want to emphasize this, because if we are really looking at a world where industrialization has been fueled by geological carbon being converted into atmospheric carbon dioxide, one way of interrupting that is to capture that atmospheric carbon dioxide through forests and reutilize it in a renewable energy system. And

certainly, forest biomass both has a potential role in producing heat and electrical energy through co-generation and certainly has a potential role as research proceeds on cellulosic ethanol, biodiesel, biobutanol, and so forth.

So if we get this right, we have quite a potential. If we get it wrong, we'll simply have a loophole that will make this whole bill irrelevant and ineffective. So I certainly appreciate your expertise being brought to bear on this issue, and I thank very much the Chair for the opportunity to come and speak.

Senator BOXER. Senator, thank you. I know how busy everybody is. We appreciate it.

Our next witness is Bill Hohenstein, Director, Global Climate Change Program, USDA.

STATEMENT OF BILL HOHENSTEIN, DIRECTOR, GLOBAL CLIMATE CHANGE PROGRAM, U.S. DEPARTMENT OF AGRICULTURE

Mr. HOHENSTEIN. Thank you, Madam Chair.

Madam Chair, Ranking Member Inhofe and members of the committee, thank you for the opportunity to discuss the economic opportunities for agriculture, forestry communities and others in reducing global warming, focusing specifically on offsets.

We recognize that the development of an offset market will require full partnership of relevant Federal agencies, including EPA, the Department of Interior, the Department of Energy, and others. Indeed, we are already working with other agencies on a variety of issues related to climate change.

Climate change legislation presents both opportunities and costs for agriculture and forestry. USDA believes that the opportunities from climate legislation will likely outweigh the costs. The climate change legislation recently passed by the House of Representatives caps over 80 percent of U.S. greenhouse gas emissions. While direct agricultural emissions are not under the required cap in the House bill, the agriculture sector will face higher energy and input costs due to a reliance on the products that are included under the cap.

A well designed cap-and-trade system that includes a robust carbon offset program and that promotes renewable energy could provide significant economic opportunities for landowners and rural communities. To be effective in addressing climate change, the offset actions need to be real, verifiable, additional, long lasting, and implemented on a broad scale.

To give some sense of context on scale, H.R. 2454 sets a 1 billion ton cap, a limit on the use of domestic offsets. USDA estimates suggest that this is roughly equivalent to 170 million acres of trees or switching to no-till farming on 1.5 billion acres of cropland.

Now, farmers and landowners have many other options to reduce emissions and increase sequestration and do not need to rely solely on tree planting or changes in tillage. These options include nutrient management, installing anaerobic digesters, composting manure, improving ruminant feeds to reduce the generation of methane, and reducing fire risks and lengthening forest rotations to store greater amounts of carbon.

Taken together, these practices and others have the potential to transform agriculture and land management within the United

States and can provide additional environmental benefits as well. A number of important issues need to be addressed in the context of the greenhouse gas offsets program to ensure environmental integrity. The main considerations include permanence, leakage, additionality, and verifiability.

The issue of permanence refers to the potential reversibility of carbon sequestration. To be effective, the carbon that is removed from the atmosphere and stored in plants and trees needs to remain out of the atmosphere, or there must be mechanisms in place to track and replace carbon offsets when reversals occur. There are a number of mechanisms for addressing permanence that ensure that responsibility for sequestered carbon is maintained over time.

Leakage refers to shifting emissions from one place to another. There are several types of leakage, and leakage can occur within an entity. It can also occur at broad regional, national and international scales as well as markets respond to changes in production driven by the implementation of conservation practices. The extent to which market leakage is an issue will depend largely on whether the mitigation activity has an impact on production. There are a number of offset activities that will very likely have low leakage. For others, efforts can be made to measure or quantify the extent of leakage and account for it in awarding offset credits.

To ensure the offsets are real and provide real atmospheric benefits, they must be additional. That is, offset credits must not be awarded for actions that would have happened in the absence of the offset policy. Given the difficulty in projecting a business as usual scenario for offset activities, measurements against a base year reference may be more practical to implement and less subjecting to gaming, fraud or interpretation.

However, relying on a base year does not account for trends that would independently lead to increases or decreases in rates of emissions or sequestration. Projected baselines are uncertain but allow the reference to reflect such trends.

H.R. 2454 as passed by the House provides approaches to address each of these considerations and in some cases provides more than one option. These approaches provide a useful starting point for the Senate's deliberation on the role of offsets.

USDA has a number of assets which could be helpful in carrying out an offsets program. A summary of them is included in my written testimony. Whatever role USDA is asked to play as part of an offset program, we would look to partner with EPA, DOI, DOE and other agencies to ensure that the program has environmental integrity and provides landowners with opportunities to contribute to addressing climate change.

Thank you for the opportunity to discuss these issues here this morning, and this concludes my prepared remarks.

[The prepared statement of Mr. Hohenstein follows:]

**STATEMENT OF WILLIAM HOHENSTEIN
DIRECTOR, GLOBAL CHANGE PROGRAM OFFICE
DEPARTMENT OF AGRICULTURE
BEFORE THE SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE**

JULY 14, 2009

Madam Chairman, Ranking Member Inhofe and members of the Committee, thank you for the opportunity to discuss the economic opportunities for agriculture, forestry communities, and others in reducing global warming, focusing specifically on reducing greenhouse gas emissions through offsets.

We recognize that the development of an offsets market will require a full partnership of relevant federal agencies including EPA, the Department of Interior, the Department of Energy and others that have expertise and assets that can contribute in the development and implementation of an offsets market. Indeed, we are already working with these other agencies on a variety of issues related to climate change.

Climate change legislation presents both opportunities and costs for agriculture and forestry. USDA believes that the opportunities from climate legislation will likely outweigh the costs. The climate change legislation recently passed by the House of Representative (HR 2454) caps over 80 percent of U.S. greenhouse gas emissions. While direct agricultural emissions are not under the required cap in the House bill, the agriculture sector will face higher energy and input costs due to the reliance on products that are included under the cap.

Energy and climate legislation that promotes renewable fuels will provide significant opportunities for farmers, ranchers and forest landowners. New technologies and practices can lower the GHG impacts from bioenergy while providing jobs and economic opportunities for rural communities.

A well-designed cap and trade program that includes a robust carbon offsets program could also provide significant economic opportunities for landowners and rural communities. The offsets provisions provided under HR 2454 provide a framework to reduce emissions from agricultural sources and enhance land based sequestration.

A viable greenhouse gas offsets market – one that rewards farmers, ranchers, and forest landowners for greenhouse gas reduction and sequestration activities – has the potential to play a very important role in helping address climate change while also providing a possible new source of revenue for landowners.

Allowing agriculture and forests an efficient mechanism to offset the emissions of regulated companies, if properly designed, will help lower overall costs for everyone including those making their living off of the land. To be effective in addressing climate change, the actions need to be real, verifiable, additional, long lasting, and implemented on a broad scale.

To provide some context, HR 2454 sets a one billion ton limit on the use of domestic greenhouse gas offsets. USDA estimates suggest that this is roughly equivalent to the sequestration potential of planting 170 million acres of trees, or switching to no-till farming on 1.5 billion acres of cropland.

Farmers and landowners have many other options to reduce emissions and do not need to rely solely on tree planting or changes in tillage. For example, farmers can change the rate, timing, and form of nitrogen fertilizer applications and can use nitrogen inhibitors to slow the release of nitrogen into the soil. Dairies and hog operations can employ anaerobic digesters and can compost or apply manure at appropriate levels instead of relying on open pits and lagoons. Cattle operations can provide feeds that are efficient and reduce the generation of methane. They can also improve their pastures and grazing lands to store more carbon. Forest landowners can reduce fire risks and lengthen rotations to store greater amounts of carbon. Taken together, these practices and others have the potential to transform agriculture and land management within the United States and can provide additional environmental benefits as well. Other policies and incentives could also help make this transformation happen.

A number of important issues need to be addressed in the context of greenhouse gas offset markets to ensure the environmental integrity of agricultural and forestry offsets. The main considerations include: permanence (or reversibility), leakage, additionality, and verifiability. These terms are linked to important underlying concepts that are geared toward ensuring effective environmental performance.

The issue of “permanence” refers to the potential reversibility of carbon sequestration. Carbon sequestration is a unique method of addressing greenhouse gas concentrations. It is the only mitigation option that actually removes carbon dioxide from the air. At the same time, sequestration practices are the only mitigation option that can subsequently reverse or release that carbon dioxide back into the air, for example through fire or a change in tillage practices. To be effective, the carbon that is removed from the atmosphere and stored in plants and soils through an offsets market must remain out of the atmosphere or there must be mechanisms to track and replace carbon offsets when reversals do occur. There are a number of mechanisms for addressing permanence that ensure that responsibility for sequestered carbon is maintained over time. There are also options that could help manage risks, including forms of insurance or term contracts that require full replacement of carbon offsets upon termination of the contract, essentially allowing the offset provider to receive a rental payment for the duration that the carbon is removed from the atmosphere.

“Leakage” refers to the shifting of emissions from one place to another. There are several types of leakage. Leakage can occur within an entity. For example, a farmer can convert a farm field to a tree plantation, but at the same time, decide to convert existing forest to cropland to make up for losses in crop production. Leakage can also occur at broad regional, national, and international scales as markets respond to changes in production driven by the implementation of conservation practices. The extent to which market leakage is an issue will depend largely on whether the mitigation activity has an impact on production. There are a number of offset activities that will likely have very low leakage. For others, efforts can be made to measure the extent of leakage and to account for it in awarding offset credits.

To ensure that carbon offsets result in real atmospheric benefits, carbon offsets must be “additional.” That is, carbon offset credits must not be awarded for actions that would have happened in the absence of the offsets policy (under business-as-usual). Given the difficulty in projecting the business-as-usual scenario for offset activities within a project-based offset program, measurement against a base year or base period reference may be more practical to implement and less subject to gaming, fraud or interpretation. However, relying on a base year does not account for trends that would independently lead to increased (or decreased) rates of emissions or sequestration. Projected baselines are uncertain, but allow the reference to reflect such trends.

HR 2454 as passed by the House, provides approaches to address each of these considerations, and in some cases provides more than one alternative. These approaches provide a useful starting point for the Senate’s deliberations on the role of offsets.

USDA has a number of assets which can be helpful in carrying out an offsets program. An offsets program will likely provide an opportunity for thousands of landowners. USDA has field staff that work with landowners throughout the country on a daily basis and can provide guidance about the benefits of participating in an offsets program. USDA staff can provide technical assistance on implementing a variety of conservation practices that sequester carbon or reduce GHG emissions. Through its conservation programs, USDA has experience in tracking tens of thousands of contracts covering millions of acres. USDA observation systems, including our Forest Inventory and National Resources Inventory monitor natural resource conditions and will be vital in tracking the effectiveness of agriculture and forest greenhouse gas mitigation actions.

The Department plays a central role in quantifying greenhouse gas sources and sinks from agricultural and forestry sources. USDA provides the greenhouse gas estimates for land use, land use change, and forestry to EPA for the Official U.S. Greenhouse Gas Inventory. USDA also provides much of the raw data that EPA uses to estimate emissions from agricultural sources to EPA each year. USDA periodically produces a focused report on the greenhouse gas emissions and carbon sequestration in the agriculture and forestry sectors, drawing on and consistent with the Official US Inventory prepared by EPA. This detailed inventory provides users at the State and local levels with detailed information about agriculture and forest greenhouse gas sources and sinks.

In 2006, USDA produced the first and only set of comprehensive farm-scale methods for estimating greenhouse gas sources and sinks from agriculture and forestry. These methods have been adopted by the Department of Energy for use in their Voluntary Greenhouse Gas Reporting System. Portions of the methods and underlying data have been adopted by other Federal, State, and private sector reporting and emission reduction programs.

USDA has, as do our other Federal partners, a number of significant assets that are vital to the development of an offsets program.

- USDA research focuses on questions that are relevant to decision makers at the Federal, state, and local levels. Areas of emphasis include: evaluating climate change risks to natural resources, estimating the role of forestry and agricultural activities in greenhouse gas emissions and carbon sequestration, and developing practical management strategies and approaches to manage emissions and adapt to changes.
- USDA maintains critical observation and data systems that will be needed to monitor and track climate change impacts and to assess progress in reducing greenhouse gas emissions and increasing carbon sequestration.

Our agencies are integrating a response to climate change into our conservation and energy programs. For example:

- The Farm Service Agency includes carbon sequestration benefits in the ranking of proposals under the Conservation Reserve Program;
- The Natural Resources Conservation Service has included guidance on climate change in all of their recently released conservation program rules.
- The Rural Development mission area has helped finance anaerobic digesters, wind projects, solar projects, geothermal projects, and energy efficiency improvements. In addition, Farm Bill authorities under Title IX support more sustainable energy production and assist first generation biofuel companies in repowering their plants using biomass feedstocks instead of conventional fuels.
- The US Forest Service is building climate resilience into its forest planning.
- Our Office of Ecosystem Service Markets is developing work around the emerging field of ecosystem service markets, including water, air, wildlife, wetlands, and greenhouse gases.
- The Global Change Program Office is responsible for coordinating climate change research and programmatic activities for the Department and for ensuring that recognition of climate change is fully integrated into the research, planning, and decision-making processes of the Department.

The Department intends to establish a new integrated Energy and Climate Change Program (ECCP) within the Office of the Chief Economist in FY 2010. This program will provide leadership and centralized coordination of USDA's energy and climate change-related activities. An integrated energy and climate change program is necessary as the Department focuses attention on opportunities and challenges for farmers, ranchers, and rural communities through the production of renewable energy and emerging environmental markets.

Whatever role USDA is asked to play as part of an offsets program, we would look to partner with EPA, the Department of Interior, the Department of Energy and other agencies to ensure the

program has environmental integrity and provides landowners with opportunities to contribute to addressing climate change.

I would like to close with the following observations. U.S. farms and forest lands offer significant opportunities to reduce greenhouse gases and increase carbon sequestration at relatively low cost. A wide range of practices exists to improve crop agriculture, animal agriculture and forestry management. While many of these actions are cost-effective relative to other greenhouse gas mitigation options, financing their implementation remains a challenge. Offset markets offer one approach to constructively engage the agriculture and forest sectors.

Thank you for this opportunity, I look forward to your questions.

SUPPLEMENTAL QUESTIONS FOR THE RECORD

Mr. William Hohenstein

Director, Global Change Program Office, U.S. Department of Agriculture

Environment and Public Works Committee Hearing

July 14, 2009

Questions submitted by:

Senator Max Baucus

1. Does USDA's July 22 analysis on the effects of HR 2454 take in to account the costs of climate change if no action is taken to curb greenhouse gas emissions, or does the analysis assume that climate change will not affect farming and ranching practices in the medium and long-term? Similarly, if climate change legislation is not passed and greenhouse gas emissions are not curbed, what will be the impact to farmers and ranchers in the United States?

Response: The preliminary analysis released by USDA on July 22, 2009, does not include the effects of climate change on agricultural systems. A report of the U.S. Global Change Research Program released in May 2008 provides a thorough assessment of the effects of climate change on agriculture, land resources, water resources, and biodiversity. While the assessment released last May does not include an analysis of the economic implications of climate change on farmers, ranchers and rural land owners, it does provide a comprehensive overview of the expected effects of climate change on natural and managed systems.

One component of climate change is the increased variability of both temperature and precipitation. There is an increased probability of more extreme temperatures during the summer, which would create a heat stress situation in plants, especially during the flowering stage. Warmer temperatures can cause plants to grow more quickly but not necessarily bigger. Increases in nighttime temperatures are especially significant and effect grain and fruit development, quality, and productivity. In the northeastern United States, warmer temperatures will allow for a longer growing season for many crops. However, early or late season freezes or frosts are still possible, and plants that start to grow or flower earlier could be damaged early in the growing season. Fewer days of frost in some parts of the country may challenge crops that require freezing in order to bloom, such as plums and almonds. Survival of pollen is sensitive to high temperatures and extreme heat events at this critical stage, even for only a few hours, could reduce grain or fruit production. The direct impacts of climate change will vary by plant species.

Extreme temperatures would affect animals as much as plants. Animals maintain a constant core temperature and, when subjected to extremes of either hot or cold, change their metabolism to regulate their temperature. Extreme heat causes animals to reduce their feed intake, increase their water intake, and reduce their metabolism to maintain healthy body temperatures. For meat or dairy animals, these sudden temperature changes reduce productivity and sometimes cause mortality. Pregnancy rates decrease at higher temperatures. Warmer winters will reduce mortality from freezing and reduce demand for winter forage reserves. The effects of temperature on animal production are significant, particularly when the extreme events occur and animals do not have adequate shelter.

Precipitation changes across northeastern United States are projected to increase and include more heavy downpours and large precipitation events. These changes are projected to occur in the winter and spring; however summer precipitation is expected to decrease. Northeastern agriculture relies on storage of soil water to directly supply plant needs and provide summer irrigation. Increased heavy precipitation in

spring could cause increased erosion on soils where adequate conservation practices are not in place. This may also create problems for field operations, creating difficulties in accessing and traversing fields for planting. Warmer temperatures cause the plants to use more water, which means more precipitation is needed to provide adequate moisture for plant growth. Decreased summer precipitation will create situations whereby plant production is reduced because of short term drought.

Additional indirect climate change effects on plants and animals may be as large as the direct impacts described above. Indirect impacts include increased disease prevalence, insect infestations, and weed pressures. There will be expanded ranges for insects and increased potential for overwintering of insects and diseases because of the warmer temperatures, which allows them to extend their ranges more rapidly. Weeds are expected to move northward, expand in range, grow more rapidly as a result of the increased concentrations of atmospheric carbon dioxide, and become less susceptible to current methods of herbicidal control.

Producers will need to be aware of, and respond to, both the direct and indirect impacts of climate change on plants and animals to ensure production of a high quality food supply. Changes in yields resulting from climate change will have a direct economic impact on both producers and consumers. The cost of production, processing, storage and transportation are also expected to increase as agriculture responds to increasing threats to production from insects, weeds and pathogens.

2. The permanence of offsets is a key concern. You noted there are a number of mechanisms for addressing permanence that ensure that responsibility for sequestered carbon is maintained over time. Can you elaborate on what these mechanisms are and who would be responsible for enforcing them?

Response: All agricultural and forestry sequestration activities are reversible. That is, carbon sequestered in soils, trees, vegetation and other organic matter can be lost due to changes in land management, natural disasters, or other factors. Reductions in methane or nitrous oxide emissions are deemed to be permanent because actions taken to reduce levels of these gases, such as changing livestock feed or fertilizer application rates, prevents the emissions from taking place.

- The issue of "permanence" is often used by opponents of carbon offsets as a reason for excluding them from a cap and trade program. However, a system that tracks carbon sequestration offsets and replaces any lost tons will leave the atmosphere whole while allowing a carbon offsets program to go forward.
- An offsets system must monitor and track credits issued for sequestration projects over time to ensure that any reversals are properly accounted for. If reversals do occur, the relevant credits must be replaced.
- If an offsets program requires landowners to enter into permanent contracts, landowner participation will be limited.
- There are a number of mechanisms that can be used to ensure that sequestration credits are tracked and replaced if there are reversals. Having more than one mechanism to deal with reversals is probably a good thing, especially in the early stages of an offsets program as landowners, aggregators and others get comfortable with the market.
 - The House legislation provides for an "offsets reserve" which is effectively a government run insurance program. Project developers would deposit credits into the reserve and, if a reversal occurs, credits would be taken from the reserve to account for GHG losses.

- A second mechanism is to allow for private insurance for reversals. As long as legislation has a clear requirement for replacement of credits if reversals occur and assignment of liability for who replaces those tons (i.e., the user of the credits or the landowner), then a private insurance market will develop.
- A third mechanism is “carbon leasing” whereby landowners enter into term contracts. At the end of the term, the buyer would either extend the contract with the landowner for another period or fully replace the tons by purchasing allowances or offsets elsewhere in the GHG market. USDA views this option as having advantages because it allows for term contracts (which landowners like) yet ensures that the atmosphere remains whole (which will retain public confidence in the market).

3. In terms of domestic production, do you believe border measures are necessary to protect the agricultural community or are there possible negative impacts for farmers and ranchers?

Response: USDA released “A Preliminary Analysis of the Effects of HR 2454 on U.S. Agriculture” prepared by the USDA Office of the Chief Economist and the Economic Research Service on July 22, 2009. It is expected that the U.S. would continue to export agricultural goods throughout the period analyzed.

With respect to the impact on domestic production, the production of fertilizer is energy intensive and, thus, potentially vulnerable to the problem of “carbon leakage.” To address this problem, through at least 2025, H.R. 2454 would provide domestic producers in sectors such as fertilizer with allowances to compensate for increased costs brought about by the implementation of the bill (referred to in the bill as “emissions allowance rebates”). Depending on the facts at the time, this compensation could continue unchanged after 2025. Because of this provision, we do not expect nitrogen fertilizer prices to be affected by the greenhouse gas cap until after 2025. This provision was included in the Preliminary Analysis provided to the Senate Agriculture Committee on July 22, 2009.

We expect other countries to act to reduce their emissions – thus reducing the potential for carbon leakage. As noted above, HR 2454 contains provisions that would compensate fertilizer producers for increased costs brought about by implementation of the bill. HR 2454 also contains provisions that would allow the President to impose border adjustments after 2020, taking into account, among other things, the extent to which emissions allowance rebates have or could address the problem of carbon leakage with respect to a particular sector. In order to avoid a negative impact on our agricultural exports, any such border adjustments would have to be applied in a manner consistent with our international obligations.

Senator Benjamin L. Cardin

1. Many people from the agricultural community have felt that they have not had a seat at the table during throughout the development of the current climate legislation.

- **What is your sense of engagement from the agriculture community and what needs to be done to better engage farmers and agricultural producers?**

Response: An important part of USDA's mission is to communicate information to agriculture and forestry communities that will aid them in understanding the challenges they face due to climate change, and in evaluating their options for mitigating emissions of greenhouse gases and adapting to changes in climate conditions. Farmers, ranchers, and rural landowners face a number of immediate challenges in carrying out day to day operations, and this may lead them to sometimes push off their concerns about climate change to the future. That said, farmers and ranchers are already acting to improve resource conditions, conserve energy, and produce renewable fuels and electricity.

- **How is USDA engaging its stakeholders and how are you promoting the opportunities that a climate bill would create for farmers?**

Response: USDA has broad networks and boots on the ground to engage farmers and ranchers on their options and opportunities to reduce greenhouse gas emissions, sequester carbon, and produce renewable fuels and electricity. USDA maintains a field based infrastructure, with county NRCS and FSA offices, state and county extension agents, and Rural Development offices across the country. We have technical expertise with the greenhouse gas sources and sinks from land systems – and an understanding of agriculture and forestry.

On issues specific to potential climate change legislation, USDA's Climate Change Program Office regularly meets with and provides formal and informal briefings to agricultural, forestry, environmental and industrial stakeholders. These meetings provide an opportunity to inform farmers, ranchers, and rural stakeholders of USDA's climate change program and activities, options being considered within the Administration and in Congress to address climate change, and to listen to ideas and concerns from these communities.

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Senator Amy Klobuchar

1. Mr. Hohenstein, does the U.S. Department of Agriculture have the staff and know-how to oversee an agriculture and forest lands offset program that meets the highest standards for efficacy?

Response: Yes, I believe that the Department has the capacity to administer a high quality, efficient, robust, and effective greenhouse gas offset program for agriculture and forest lands. Any GHG offsets system will require a set of five major elements. These include:

- Research;
- Rule and Method Development;
- Program Implementation;
- Outreach and Education; and
- Observation, Analyses, and Assessment

USDA has capabilities in all of these areas. USDA maintains a robust research program that is identifying the practices and technologies that generate greenhouse gas benefits. Our ongoing research provides a basis for establishing consistent metrics for quantifying emissions and sequestration. USDA has expertise in administering conservation and commodity programs that reach hundreds of thousands of producers and land owners. We maintain extension and technical assistance capabilities to provide support in the implementation of conservation practices. We also maintain several of the critical observation systems that make up the Federal Government's comprehensive multi-agency effort to measure and quantify greenhouse gas emissions and carbon storage at regional and national scales. USDA networks include the Agriculture Census, the National Resources Inventory, the Soil Survey, the Forest Inventory, and various surveys of farmer practices and resource conditions, including the Conservation Effects Assessment Project and the ARMS Survey.

USDA also recognizes that successful implementation of a carbon offsets program will require substantial regulatory work, including emissions tracking, compliance assistance, and enforcement activities to ensure that the full extent of atmospheric reductions are realized. USDA must work in full collaboration with other federal agencies, particularly EPA, in this important endeavor. EPA and USDA are aware of the work needed to move forward with offsets and other policies for the agriculture sector, and are currently working in these areas. We believe we can work together seamlessly to implement a robust offsets program of the highest quality.

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Senator James M. Inhofe

1. Has USDA done an analysis of how food prices or feed prices will rise for cattle and livestock? If we are not smart about this, could we be setting ourselves up for the unintended consequences of the Biofuel Mandate all over again?

Response: USDA released "A Preliminary Analysis of the Effects of HR 2454 on U.S. Agriculture" prepared by the USDA Office of the Economist and Economic Research Service on July 22, 2009. Our preliminary analysis did present the impacts on livestock prices due to higher energy prices in the short-term. However, the impacts on livestock prices were negligible because the impact of HR 2454 was small in the short-term. We were unable to assess the impact of the removal of cropland and pastureland for afforestation because we did not have detailed information on the location and type of land that would be converted.

We are planning to finalize this analysis and include a more detailed discussion of the implications of land use competition due to demand for renewable energy and greenhouse gas offsets.

2. CRS in a June 19 memo recently confirmed that new EPA estimates of the potential for agriculture soil sequestration (via no till etc) are significantly lower than EPA 2005 estimates. EPA's new estimate range is zero to 20 million tons of CO2 per year, down from 150-200 million tons per year. Now this is significant because agricultural soil sequestration has been the most discussed means by which farmers could participate in CO2 offset markets (and the 2005 EPA study is the most cited); are you familiar with this report? Do you agree with this report?

Response: We are familiar with the EPA 2005 study and their more recent analyses of proposed climate change legislation, including the recent analysis of HR 2454. In reviewing EPA's findings of the potential for domestic forestry and agricultural offsets, USDA provided comments to EPA that were reflected in the analysis released by EPA on June 23, 2009. In their revised analysis, EPA noted the following:

- The sources of domestic offsets modeled represent sources that have significant supply in the FASOM model at the relevant allowance prices. The exclusion of other sources in the modeling results does not imply that those sources would not be eligible to receive offsets credits.
- The FASOM modeling did not account for several categories of potential agricultural GHG reductions, including:
 - Improvements in organic soil management;
 - Advances in feed management of ruminants;
 - Changes in the timing, form, and method of fertilizer application; and
 - Alternative manure management systems – other than anaerobic digesters
- Because of how it is handled in the model, agricultural soil sequestration does not show significant supply at the aggregate level. However, detailed FASOM output indicates a 50 percent increase in the percent of cropland using conservation-tillage and no-till by 2020 in response to a \$15/ton CO2 incentive payment. Because overall land area in crops declines due to afforestation, the modeling indicates a net decrease in total agricultural soil carbon storage as carbon is transferred from the agricultural soils pool to the afforestation carbon pool. This in effect masks the true offset potential of soil carbon sequestration on agricultural lands, which is substantial and a likely source of offset revenues for farmers.

- Within the model, reductions in fertilizer use result in declines in yields. To the extent fertilizer application can be improved without yield penalties, the potential for this category of emissions reductions will be higher.

One of most important updates which contributed significantly to differences between results in the 2005 report and recent analyses was inclusion of recent policies and measures that impact land use, including the projected volume of biofuels outlined in the new renewable fuels standards (EISA/RFS2). Incorporating these policies into the model along with the other FASOM updates outlined above changed the resulting marginal abatement cost (MAC) curves used to estimate GHG offsets from the U.S. forest and agricultural sectors.

We are continuing to work with EPA to improve the analysis of greenhouse gas offsets from the forestry and agricultural sectors.

3. Given your knowledge of what it takes to assemble the current inventory on GHG emissions for agriculture, and the quality of that data, I would like to explore a question or two about the Greenhouse Gas Registry in the House passed bill. By the way, my farmers appreciate what you have done in that Inventory, and they are proud of the fact that livestock agriculture as a whole accounts for only about 2.5% of the nation's GHG emissions, and that their animals' manure is responsible for less than 1 % of the total.

I am thinking about the EPA proposed Registry rule, and the statutory Registry language as it applies to livestock farmers. My farmers tell me that the data that they would be required to gather through monitoring their manure and its emissions for the Registry will be of no better quality, and could in many cases could be of much worse quality, that that used by USDA and EPA to generate its annual GHG inventory from livestock manure. Could you comment on the strength of the USDA estimates of manure GHG emissions reported in the annual Inventory?

As a matter of policy, is there any reason you and EPA should not simply rely on your estimates to support the objectives of the Registry, rather than require individual farmers to collect manure, send it out to be tested, and monitor methane gas, and then run it through the equations to report a number back to you?

Response: The Environmental Protection Agency (EPA) prepares a comprehensive inventory of U.S. greenhouse gas sources and sinks each year and reports this information to the United Nations to meet requirements under the UN Framework Convention on Climate Change. USDA assists EPA in the preparation of this document and provides key data and information needed to prepare estimates of greenhouse gas emissions from manure management systems. In addition, USDA periodically produces a detailed report of greenhouse gas emissions from agriculture and forestry sources and sinks. This document is entirely consistent with the national estimates reported by EPA but provides greater detail including information for specific commodities, livestock types, practices, and geographic detail to the state and in cases county level. The purpose of the USDA series of documents is to complement the EPA report and to provide information at a scale useful to conservation and resource managers at the state and county levels.

In addition, in 2006, USDA released a set of technical guidelines for estimating and reporting greenhouse gas emissions and sinks from forestry and agricultural activities. More details on this effort are provided in the response to Senator Crapo's question 2 below.

On September 22, 2009, EPA released the Final Greenhouse Gas Mandatory Reporting Rule (available at <http://www.epa.gov/climatechange/emissions/ghgrulemaking.htm>). EPA was required

by Congress in their FY 2008 appropriations to develop a mandatory greenhouse gas reporting system. The final rule generally does not include land management and agricultural sources, with the exception of livestock and poultry facilities with manure management systems that emit at least 25,000 metric tons of greenhouse gases (GHGs) annually. In addition, the requirement for monthly monitoring of manure for volatile solids and nitrogen content, which is referenced in the question, was not included in the final rule. Instead, EPA is providing default values based on the values used in the annual EPA greenhouse gas inventory. The Department of the Interior, Environment and Related Agencies Appropriations Act, 2010, signed into law on October 29, 2009, prohibits EPA from expending any funds to collect greenhouse gas emission from manure management systems for fiscal year 2010. Therefore, EPA will not implement the reporting requirements for any manure management system in 2010.

The rule does not regulate or tax the emissions of greenhouse gases. EPA estimates that the average cost to conduct the laboratory testing and do the emission calculations would be approximately \$900 per facility. We recognize that some dairy, hogs, cattle and poultry operations will be required to report under this proposed rule.

Under the reporting rule EPA intends to use the information, including the type of manure management systems in operation and the number and types of animals serviced by those systems, to help to inform future climate change policy decisions. While the actual number of facilities reporting will be quite small in comparison to the total number of facilities in the U.S., the data gathered through this effort will be will help to improve the understanding of emission rates and actions that facilities take to reduce emissions and may improve the effectiveness and design of programs to reduce emissions.

4. I note in EPA's June 23rd analysis of the House legislation that they estimate that cropland shifts into forestland as the cost of carbon offsets rises. EPA staff is reporting that the models estimate that in 2010, 11 million acres will shift out of cropland and into forests, and by 2050 that number is 56 million acres. As such acreage shifts out of crops into trees, of course the price of feed grains will go up, a good thing for crop farmers and cropland owners, but this will be really rough on livestock farmers. So I am looking forward to seeing USDA's economic analysis of the legislation just so we can really understand what will happen here in the US.

Can you tell me if USDA is thinking about where this crop and food production will take place as we reduce food production in the US to produce more trees to sequester carbon, and does it have any impact on our ability to feed ourselves, or maintain our role in export markets?

Response: In reviewing EPA's findings of the potential for domestic forestry and agricultural offsets, USDA provided comments to EPA that were reflected in the analysis released by EPA on June 23, 2009. These comments indicate that there are additional categories of agricultural offsets which were not included in the EPA analysis, that are compatible with commodity production. Pursuing greenhouse gas reductions that are compatible with food production can help to ensure that food supply will not be adversely impacted.

In their revised analysis, EPA noted the following:

- The sources of domestic offsets modeled represent sources that have significant supply in the FASOM model at the relevant allowance prices. The exclusion of other sources in the modeling results does not imply that those sources would not be eligible to receive offsets credits.
- The FASOM modeling did not account for several categories of potential agricultural GHG reductions, including:

- Improvements in organic soil management;
 - Advances in feed management of ruminants;
 - Changes in the timing, form, and method of fertilizer application; and
 - Alternative manure management systems – other than anaerobic digesters
- Because of how it is handled in the model, agricultural soil sequestration does not show significant supply. However, detailed FASOM output indicates a 50% increase in the percent of cropland using conservation-tillage and no-till by 2020 in response to a \$15/ton CO₂ incentive payment. Because overall land area in crops declines due to afforestation, the modeling indicates a net decrease in total agricultural soil carbon storage as carbon is transferred from the agricultural soils pool to the afforestation carbon pool.

The FASOM model currently is the only model currently available that can assess the competition for land in the context of greenhouse gas policy. FASOM results indicate a net shift in land use from agriculture to afforestation activities. However, the net land use transfer numbers are slightly lower than those quoted in your question above. The values cited in the question reflect only the shifts from crop and pasture to forests and do not take into account land use shifts from forestry to crop and pasture lands or development. If the shifts to cropland are included, for \$15 carbon price rising at 5% annually; 4.5 million of net cropland is lost in 2010, 48.5 million acres is lost in 2050.

Further analyses of these interactions are needed. For example, the impact of these land use shifts may in part be counteracted by technological and management improvements such as increased yields in response to higher commodity prices.

We are continuing to work with EPA to improve the analysis of greenhouse gas offsets from the forestry and agricultural sectors. We are working with EPA to review assumptions in their baseline analysis and the assumptions regarding land rents and carbon sequestration rates used in their mitigation scenarios. We believe by better understanding these key inputs we can better understand why the EPA analysis is showing declines in cropland and commodity production. We intend to compare the results from EPA's modeling with other analyses to determine if these results are robust and consistent with other findings.

5. Is this something that the Administration is thinking about, not only as a matter of food production, but also as a matter of GHG leakage internationally?

Response: Yes, it is clear that global demand for food will grow throughout the projection period. The Department recognizes that competition for land for food, fuel, and conservation will become more intense throughout the century and is focused on research that will improve the sustainable production of food on existing croplands, methods for reducing greenhouse gas emissions and increase carbon sequestration on working lands, and techniques for utilizing residues and marginal lands for biomass energy feedstocks. The issues of international competitiveness and international leakage are also important. HR. 2454 includes an international as well as a domestic offsets program, which will help mitigate leakage in the agricultural and forestry sectors. Climate change is a global issue that demands a global solution. Broad international participation in combating climate change will lessen concerns over international competitiveness and international emissions leakage.

The U.S. is pressing major emerging economies to take significant actions that are consistent with what the science demands, but they will not agree to major reductions if the U.S. does not take robust action. So the critical first step must be to put our own house in order with a comprehensive, mandatory national program. The U.S. is working to craft a truly global agreement to address climate change by pushing forward on three related fronts: first, through the UN Framework Convention on Climate Change,

second, through the Major Economies Forum with the world's 17 largest economies, and third, through high-level bilateral engagement with China, the world's largest emitter.

6. Domestic offset credits can provide a vital form of cost containment in a cap and trade system. But wouldn't you agree that placing arbitrary restrictions on offset credits would unnecessarily limit a cap and trade program's ability to reduce compliance costs, likely resulting in inflated allowance prices? Wouldn't it be fair to say that eliminating such unnecessary restrictions would strengthen a program's ability to contain compliance costs in a way that would not decrease overall emission reductions?

Response: A limit on the volume of offset credits that can be used to meet compliance obligations under a greenhouse gas cap and trade system would only increase overall compliance costs and increase allowance prices if the limits are binding. While HR 2454 contains limits on the use of domestic and international offsets, EPA's June 23, 2009 analysis of HR 2454, projects that neither limit would be binding. According to the core scenario of EPA's June analysis, the annual limit on domestic offsets is never reached. While the limits on the usage of international offsets (accounting for the extra international offsets allowed when the domestic limit is not met) are not reached, the usage of international offsets averages over 1 billion tCO₂e each year.

Without prejudging the deliberations occurring in the Senate, we note that while capping the use of domestic and international offsets could raise overall costs, it would also require reductions from capped sectors and could stimulate innovation in these sectors.

7. It is my understanding that allowing broader use of offsets will not affect a climate change program's overall cap on emissions or its ability to reduce emissions. To the contrary, isn't it true that a broader use of offsets will create incentives to develop new technologies, products, and processes that reduce emissions, thereby achieving emissions targets at a substantially lower cost and with greater incentives for innovation?

Response: The incentives created by an offsets market under a cap and trade system have the potential to spur innovation in technologies, products and processes. To enable this, the rules governing the offsets market will need to be able to accommodate new approaches to reduce emissions and increase carbon sequestration. For example, as new technologies to improve fertilizer utilization efficiencies or refine manure management systems are developed, the methods to quantify the benefits of these technologies will also be needed, and processes will need to be in place to ensure that innovative approaches are not discouraged. It is important to ensure that all approved activities that generate offsets are verifiable, additional, permanent, and effective at reducing greenhouse gas emissions or increasing carbon sequestration.

8. As you're probably aware, some recent climate change proposals have sought to set limitations on how many offset credits an individual source can use for compliance purposes. Wouldn't you agree that such a limitation undermines the market's ability to identify the most efficient and cost-effective emission reductions? Moreover, wouldn't the unrestricted use of offsets allow project developers access to the full market and all of its participants?

Response: To the extent that an overall limit on offset usage is desired, a limitation on individual sources' use of offsets is one way of operationalizing that limit. There are a variety of views on the merits of limitations on offsets and the Administration does not currently have a position.

9. It is my understanding that any new cap and trade program without a concrete list of eligible offset projects creates uncertainty in existing carbon markets that could disrupt ongoing efforts to mitigate climate change and discourage investment in new offset projects. Wouldn't you agree that

any cap and trade program should include a nonexhaustive list of project types that will be eligible for offset credits, such as a list of projects that already are well-established and have proven track records for delivering real, permanent, verifiable, and additional emission reductions?

Response: Eventually, a list of eligible offset projects will be required as an offset program is implemented. The provision of an initial list could aid in rapid implementation of the offsets provisions of a cap-and-trade system. However, procedures will need to be in place to ensure that innovative new approaches to reduce emissions and increase carbon sequestration can be developed and become eligible for offset credits, and to ensure that included practices result in real, verifiable, and additional emissions reductions.

10. There has been a substantial amount of investment in voluntary carbon markets prior to 2009, much of which has been done by "early movers." It seems to me that these early movers should be given some sort of recognition for their efforts. Wouldn't you agree that this would be the equitable thing to do? As such, shouldn't any climate change program recognize emissions reductions achieved by eligible offsets prior to the establishment of any climate change program?

As drafted, Section 740 of HR 2454 gives the EPA Administrator the responsibility for administering early offset supply for offset projects initiated after January 1, 2001 and that meet a set of criteria. Early offset credits should be issued under a State or tribal law or regulation or through a registry that is at least of equal stringency to the criteria and methodologies of the programs established under State or tribal law or regulation. Our understanding of this provision is that it would establish the rules developed under State or Tribal law or regulation as the effective minimum standard. Offset projects reported under other registries would only be eligible if these other registries are found to be at least as stringent as the State and tribal registries approved by the EPA Administrator. To our knowledge, EPA has not evaluated existing State, tribal or voluntary offset programs and registries against the criteria outlined in Section 740 of HR 2454. As such, EPA has not made determinations of potential eligibility.

Section 504 (a)(2)(B) outlines additionality requirements to be used by the Secretary of Agriculture for agricultural and forestry offsets. These provisions provide exceptions for activities that meet the requirements of Section 740, and also allow for early crediting of activities that are readily reversible. For activities that are readily reversible, the Secretary may set an alternative earlier date to begin crediting offsets, not earlier than January 1, 2001. In determining whether to set an alternative date, the Secretary will need to determine that setting such an alternative date may produce an environmental benefit by removing an incentive to cease and then reinstate activities that began prior to January 1, 2009. The goal of this provision is to improve the environmental performance of the offset provision by removing incentives to reduce existing carbon stocks. Reversible activities include measures that sequester carbon in soils and plants. Under the provisions, readily reversible activities are not required to be registered under a regulatory or voluntary registry.

The intent of the Administration is to support forward-looking energy legislation that spurs U.S. development of advanced, clean energy technologies to reduce our dependence on oil, strengthen our energy and national security, create millions of new jobs all across America, and help prevent the worst consequences of climate change. Key underlying issues to balance include: attempting to treat all farmers consistently and fairly; ensuring that early adopters are not put at a disadvantage relative to their neighbors and other farmers; and ensuring that overall environmental objectives are met.

Senator Mike Crapo

1. In your testimony, you stated that, "USDA periodically produces a focused report on the greenhouse gas emissions and carbon sequestration in the agriculture and forestry sectors, drawing on and consistent with the Official US Inventory prepared by EPA." As you may know, new EPA estimates of the potential for agricultural soil sequestration are significantly lower than EPA 2005 estimates. EPA's 2005 study estimated a carbon mitigation potential of about 150-200 million metric tons (MMT) CO₂ equivalent per year for agriculture soil carbon activities, but EPA's 2009 estimates range instead from 0 to 20 MMT CO₂ equivalent. Does USDA's data reflect this change?

Response: Estimates of agricultural soil carbon sequestration as reported in the US Greenhouse Gas Inventory prepared by EPA have not changed significantly and are entirely consistent with the values reported in USDA's periodic inventory of greenhouse gas emissions and sinks in the agriculture and forestry sectors. These estimates are prepared by Colorado State University using the CENTURY model in combination with the Tier 2 methodologies established by the Intergovernmental Panel on Climate Change.

The values referred to in your question come from various economic analyses released by EPA of the future potential for additional carbon sequestration in agricultural soils if a greenhouse gas reduction cap is put into place. The EPA 2005 study "Greenhouse Gas Mitigation Potential In U.S. Forestry and Agriculture" concluded 62-168 million metric tons of CO₂e per year increase in agricultural soil carbon was possible under carbon values of \$1-\$15/ton. A more recent analysis of S. 3036, introduced in the 110th Congress, using the same model but with important updated input assumptions showed net increases in agricultural soil carbon to be significantly lower, on the range of 0-20 million tons of CO₂e per year.

These differences have generated a number of questions. One of most important updates which contributed significantly to differences between results in the 2005 report and recent analyses was inclusion of recent policies and measures that impact land use, including the projected volume of biofuels outlined in the new renewable fuels standards (EISA/RFS2). Incorporating these policies into the model along with the other FASOM updates outlined above changed the resulting marginal abatement cost (MAC) curves used to estimate GHG offsets from the U.S. forest and agricultural sectors. Also, USDA has reviewed both analyses and determined that in part the differences are due to greater volumes of land being shifted out of food crop production for biomass energy and tree planting. While farmers are adopting practices to sequester additional carbon on working cropland, the total amount of carbon stored on cropland only rises slightly or declines in EPA's policy scenarios. USDA provided comments to EPA that were reflected in the analysis released by EPA on June 23, 2009. In their revised analysis, EPA noted the following:

- Because of how it is handled in the model, agricultural soil sequestration does not show significant supply at the aggregate level. However, detailed FASOM output indicates a 50 percent increase in the percent of cropland using conservation-tillage and no-till by 2020 in response to a \$15/ton CO₂ incentive payment. Because overall land area in crops declines due to afforestation, the modeling indicates a net decrease in total agricultural soil carbon storage as carbon is transferred from the agricultural soils pool to the afforestation carbon pool. This in effect masks the true offset potential of soil carbon sequestration on agricultural lands, which is substantial and a likely source of offset revenues for farmers.

We are continuing to work with EPA to improve the analysis of greenhouse gas offsets from the forestry and agricultural sectors.

2. Could you talk a little bit more about USDA's expertise in creating and implementing the first and only set of comprehensive farm-scale methods for estimating greenhouse gas sources and sinks from agriculture and forestry?

Response: In 2003, the Department of Energy requested technical support from USDA in preparing revised greenhouse gas reporting guidelines for use in the National Voluntary Greenhouse Gas Reporting Registry administered by DOE under Section 1605(b) of the 1992 Energy Policy Act. USDA prepared technical methods, modeling tools, and supporting documentation for all greenhouse gas sources and sinks in the agriculture and forestry sectors. These guidelines enable farmers and land owners to estimate, report, and register greenhouse gas reductions and carbon sequestration. USDA worked closely with the Department of Energy, EPA and other federal agencies and institutions in their preparation and release.

The revised guidelines include "state-of-the-science" guidance and tools for estimating emissions from agricultural, forestry, and conservation activities important for carbon sequestration efforts, as well as from other sources of greenhouse gases. Other provisions encourage participation in the program by small emitters of greenhouse gases, such as farmers and small businesses.

The guidelines offer farmers and ranchers an on-line tool for carbon calculation called COMET-VR which provides a simple and reliable method for estimating soil carbon sequestration. The technical guidelines for forests include a series of detailed carbon stock default tables with guidance on applying the tables for inventory purposes, direct measurement protocols, and guidance on the use of models.

Actions that farmers and landowners can consider reporting include using no-till agriculture, installing an anaerobic digester, improving nutrient management, and managing forestland. The program provides opportunities for agriculture and forestry to partner with industry, in developing actions to reduce greenhouse gases by allowing them to document benefits of actions.

For more information on visit: http://www.usda.gov/occe/global_change/gg_reporting.htm

Looking forward, we envision a process to continue to broaden and refine the guidelines. We plan to engage the public and the technical experts at every step to ensure that the most recent information is included and that there is high confidence in the emissions reductions produced through agricultural and forestry offsets.

In general, we are contemplating developing methods that are stand-alone and will be designed to: 1) quantify the emissions and sinks associated with specific source-categories; 2) quantify emission reductions and carbon sequestration from conservation and land management practices and technologies; 3) support the development of entity and farm-scale greenhouse gas inventories; 4) develop prototype reporting systems and 5) ensure compatibility with any new federal incentive-based or offset-based greenhouse gas reduction system to the extent possible.

The products will initially be made available for use in public and private registries and reporting systems. The products will also be used by the Department in assessing the performance of conservation and renewable energy programs. Finally, the guidelines and tools will be prepared to facilitate their adoption and use in a federal regulatory greenhouse gas offsets market.

3. Can you describe to the best of your ability, what the proper role of USDA is in the administration of the offsets program from agriculture and forestry?

Response: I defer on addressing directly the question of a proper role for USDA in the administration of a greenhouse gas offset program. The issue of what is proper is best left to Congress, working with the Administration.

From a technical standpoint, USDA has the capacity to administer a high quality, efficient, robust, and effective greenhouse gas offset program for agriculture and forest lands. Any GHG offsets system will require a set of five major elements. These include:

- Research;
- Rule and Method Development;
- Program Implementation;
- Outreach and Education; and
- Observation, Analyses, and Assessment

USDA has capabilities in all of these areas. USDA maintains a robust research program that is identifying the practices and technologies that generate greenhouse gas benefits. Our ongoing research provides a basis for establishing consistent metrics for quantifying emissions and sequestration. USDA has expertise in administering conservation and commodity programs that reach hundreds of thousands of producers and land owners. We maintain extension and technical assistance capabilities to provide support in the implementation of conservation practices. We also maintain the critical observation systems that are already supporting the Government's efforts to quantify greenhouse gas emissions and carbon storage at national scales.

USDA also recognizes that successful implementation of a carbon offsets program will require substantial regulatory work, including emissions tracking, compliance assistance, and enforcement activities to ensure that the full extent of atmospheric reductions are realized. USDA must work in full collaboration with other federal agencies, particularly EPA, in this important endeavor. EPA and USDA are aware of the work needed to move forward with offsets and other policies for the agriculture sector, and are currently working in these areas. We believe we can work together seamlessly to implement a robust offsets program of the highest quality.

4. Do you feel that the changes made in the American Clean Energy and Security Act by Chairman Peterson were adequate to ensure that USDA has an appropriate role to play in the administration of offsets?

Response: The provisions added to the American Clean Energy and Security Act by House Agriculture Committee Chairman Colin Peterson directs USDA to administer the greenhouse gas offsets program for agriculture and forestry. I defer on addressing directly the question whether this is the appropriate role for USDA. [This issue is best left to Congress to address, working with the Administration.]

5. The Waxman-Markey legislation provides for a total of 2 billion offsets, 1 billion domestic and 1 billion international. It also allows for international offsets totaling 1.5 billion if 1 billion of domestic offsets is unavailable. According to available USDA data, can U.S. farms and forests provide 1 billion offsets?

Response: Most analyses of domestic agriculture and forestry offsets conducted to date find less than 1 billion tons of GHG offsets per year for relevant CO₂e/ton prices. According to the core scenario of EPA's June 2009 HR 2454 analysis, the annual limit on domestic offsets is never reached. While the limits on the usage of international offsets (accounting for the extra international offsets allowed when the

domestic limit is not met) are not reached, the usage of international offsets averages over 1 billion tCO₂e each year.

6. Early actors are a key issue, especially for many forest owners in my state who have been managing their land well, sequestering carbon for generations. Many have talked about the need for "additionality" in the context of the cap and trade system where a landowner would not be eligible for offsets credits if they are already undertaking the carbon sequestration activity. How do we adequately ensure that there isn't an incentive for these owners to stop doing good things, which might ultimately result in a loss of our nation's climate mitigation capacity?

Response: The United States has historically rewarded innovation and risk taking. While USDA does not wish to prejudge policy and ultimately Congress will need to decide this issue, there are a number of issues that will need to be balanced, including the need to treat all farmers consistently and fairly; ensuring that early adopters are not put at a disadvantage relative to their neighbors and other farmers; and ensuring that overall environmental objectives are met.

The House included provisions in HR 2454 to address early adopters. Section 740 gives the EPA Administrator the responsibility for administering early offset supply for offset projects initiated after January 1, 2001. Early actions are eligible if they are issued under a regulatory or voluntary greenhouse gas emission offset program that the Administrator determines meet a set of six criteria.

Section 504 (a)(2)(B) outlines additionality requirements to be used by the Secretary of Agriculture for agricultural and forestry offsets. These provisions include early crediting for activities that meet the requirements of Section 740, and also allow for early crediting of activities that are readily reversible. For activities that are readily reversible, the Secretary may set an alternative earlier date to begin crediting offsets, not earlier than January 1, 2001. In determining whether to set an alternative date, the Secretary will need to determine that setting such an alternative date may produce an environmental benefit by removing an incentive to cease and then reinstate activities that began prior to January 1, 2009. The goal of this provision is to improve the environmental performance of the offset provision by removing incentives to reduce existing carbon stocks. Reversible activities include measures that sequester carbon in soils and plants. Under the provisions, readily reversible activities are not required to be registered under a regulatory or voluntary registry.

7. The House-passed climate bill contains a set aside of roughly \$600 million over 4 years for "supplemental agriculture and renewable energy incentives". Since agriculture and forestry together make up a large portion of the potential emissions reductions that we could generate in the U.S., do you see this program applying to private forests in the U.S. and are there any clarifications you would recommend to improve this program?

Response: There are a number of greenhouse gas mitigation actions that for one reason or another may not qualify for offsets under a regulatory cap and trade system. The methods for estimating emissions and reductions from some actions may have high uncertainties or may not be available. Some actions may not qualify if there are questions about additionality or leakage. Finally, actions on State and Federal lands could provide significant greenhouse gas reductions but will not likely be eligible for offset credits. A well designed set aside program could ensure that incentives exist to support these types of actions. There are a number of important considerations and competing priorities for the limited number of allowances available. The Administration has stated that auctioning off the allowances is a preference.

Senator BOXER. Thank you very much.

I see we have been joined by Senator Gillibrand of New York. We welcome her, and you have 3 minutes to make an opening statement.

**OPENING STATEMENT OF HON. KIRSTEN GILLIBRAND,
U.S. SENATOR FROM THE STATE OF NEW YORK**

Senator GILLIBRAND. Thank you, Madam Chairwoman.

I just want to thank you for calling this hearing. I am very appreciative.

I want to thank our witnesses.

I serve on the Environment and Public Works Committee, but I also serve on the Agriculture Committee. And so I thought this hearing was particularly of importance to see how our farmers, our original green economy, can be part of the energy solutions that we are talking about.

We have so many opportunities in New York in the agricultural sector and in the energy market sector, and there is a large area of confluence that I hope that we can take advantage of. I think some of your testimony on the cap-and-trade policy and how we can play a role in offsets is going to be very important. I also am very excited about opportunities for secondary revenue streams for our farmers through cellulosic ethanol, other biofuels, methane digesters. There are a lot of opportunities for growth in that sector because of alternative energy.

I also am interested in the role of forestry. I think that New York, one doesn't typically think of forests, but actually more than 62 percent of the State is forested. We have the Adirondacks and the Catskill Mountains. We have forestry all through western New York as well. The State's forest industry employs more than 60,000 New Yorkers and contributes nearly \$4.6 billion to our economy every year.

So as we move toward climate change legislation, I hope that we will also look at the roles that forests also provide. I know that there are technologies that are very interesting, particularly in cellulosic ethanol production using wood pulp not used in paper-making. So I want to make sure that we look at those when we define what alternative crops can be, not to exclude inadvertently forests, which don't have necessarily the same characteristics of a crop.

So I look forward to this testimony. I am very grateful for your time and attention. And I am very grateful to the Chairman and the Ranking Member for their interest.

Senator BOXER. Senator, thank you very much for coming over. And I know we will continue to work one on one on some of your concerns about New York's agriculture and how they can benefit from our climate change efforts.

And so now we are going to turn to our next witness, Fred Krupp, President of the Environmental Defense Fund. And I think it is important to know that the organization has been participating in on the ground carbon offsets projects since the mid-1990s. So we really welcome you here.

**STATEMENT OF FRED KRUPP, PRESIDENT, ENVIRONMENTAL
DEFENSE FUND**

Mr. KRUPP. Thank you, Chairman Boxer and members of the committee. Thank you for inviting me to speak to you today.

I am honored to appear before you as you begin your work on this historic piece of legislation.

I would like to begin my remarks by making one point. Environmental Defense Fund believes that an effective climate solution must include agricultural offsets. American farmers, foresters and landowners can provide creditable emissions reductions while earning a new income stream, and we must give them that opportunity.

Smart policies in this area, together with policies designed to reduce emissions from international deforestation and forest degradation, will provide substantial environmental benefits and tremendous cost savings for U.S. companies operating under an emissions cap.

Now, my written testimony is quite detailed and the time for your right now is short. So I would like to impress this upon you: I know the topic of carbon offsets can be controversial, and advocates all around have strong feelings about various aspects of the program. But as we move forward, we cannot lose sight of the fact that we all have an enormous stake in achieving a strong and successful offsets program.

The environmental reasons for this are obvious. But it should be equally obvious that the core elements of the offset program are critical benchmarks for the market that will ultimately put a price, a monetary value, on these tons, and a strong offset program means better returns for the landowners that participate in it.

EDF has long advocated the use of offsets in a carbon cap-and-trade system as a cost-effective means for regulated companies to meet their compliance obligations. Cost-effective compliance options like high-quality offsets will help get us where we need to go with respect to the atmosphere.

Now, turning to the House bill, ACES, it embraces this point of view, relying on offsets as a key cost containment strategy. It allows banking of offsets credits, which increase opportunities for companies to build up reserves of low-cost compliance options that can buffer against higher or volatile allowance prices in the future.

The bill also has very generous offset limits, which can be increased overall or shifted between international and domestic supplies depending on need. Separately from the offsets program, the ACES bill allows unlimited compliance use of allowances from comparably capped trading systems in other countries.

These aren't just important cost management devices. These are vital. EPA's analysis of the ACES bill concluded that allowing domestic offsets to trade one for one, rather than five to four, as was the case in the original draft of the bill, lowers allowance prices by about 7 percent each year. International offsets are also crucial. EPA analysis shows that by eliminating international offsets, the cost would increase by about 89 percent.

Additionally, EDF's own modeling shows that the introduction of offset credits for reduced deforestation lowers allowance prices by an estimated 22 percent based on the cost estimates used in the EPA analysis. The potential price reductions grow to more than 40

percent of the program and include all sources of international forest carbon and are not limited to deforestation reductions.

Now, I am not going to tell you the ACES bill is perfect. In fact, I don't think anyone at this table would say so. In my written testimony, I have outlined some important areas for the committee to consider to improve, with respect to the role of science in the program, credit for past activities, accountability at the oversight agency, and the use of reductions in tropical deforestation. I hope we can cover some of this ground during the Q and A.

In conclusion, I just want to restate that all of us—farmers, ranchers, landowners, emitting companies and the average citizen—have a stake in establishing a good, science-based offsets program. Carbon offsets must represent real, measurable, verifiable benefits to the atmosphere, and the program itself must stand up to public scrutiny. If the program isn't considered credible, all of our efforts in this process will be for naught, and we very well may push the atmosphere past the point of recovery. We cannot afford to fail in this area.

Thank you for this opportunity to speak today.

[The prepared statement of Mr. Krupp follows:]

Statement by

Fred Krupp
Environmental Defense Fund
July 14, 2007

regarding

Economic Opportunities for Agriculture, Forestry Communities, and Others in
Reducing Global Warming Pollution

submitted to

The U.S. Senate
Committee on Environment and Public Works

Introduction

I am honored to be here with you today as this Committee discusses the economic opportunities for agriculture, forestry communities, and others in reducing global warming pollution.

Chairman Boxer, members of the Committee, Environmental Defense Fund thinks that an effective climate solution must include US agricultural offsets. We favor allowing American farmers, foresters, and landowners the opportunity to provide creditable emissions reductions while earning a new income stream. Policies designed to reduce emissions from deforestation and degradation can address nearly 20 percent of global greenhouse gases while providing tremendous cost savings for US companies under an emissions cap.

My testimony today will outline: 1) the general reasons for EDF's support for science based offsets, 2) principles that provide the integrity needed for offsets to flourish and achieve maximum benefit, 3) opportunities to improve the ACES offset provisions, 4) further elaboration on how offsets provide environmental benefit, 5) the ability to engage other countries through programs to reduce emissions from deforestation and degradation, and 6) the role of offsets in reducing costs and creating jobs.

1. EDF Supports Agricultural and Forest Opportunities

With the right incentives, farms, forests and other unregulated sources can offer an immediate opportunity to reduce emissions domestically and internationally, and they have the potential to substantially shrink companies' costs of complying with a cap-and-trade program without compromising the integrity of a firm emissions cap. Smart policies can broadly engage farmers, ranchers, and foresters, as well as key major-emitting developing countries, in providing solutions

and sharing in the economic opportunities of the transition to a low-carbon economy. Well-designed agricultural and forestry activities can also provide substantial additional environmental benefits that are felt well beyond our atmosphere.

We speak from experience. Environmental Defense Fund engaged in its first terrestrial carbon sequestration demonstration project in the mid 1990s, with a study on sequestration in Russian forests. We helped broker the first publicly disclosed demonstration transaction, between the Pacific Northwest Direct Seed Association and Entergy, in 2002. We have participated in programs around the nation to develop protocols and methodologies to grant credit for agricultural offset projects. We have worked to establish and evaluate pilot projects. And we have talked to farmers. We have learned from farmers and foresters and understand, to achieve their goals, policies and programs have to provide environmental integrity – and be practical to implement.

We have supported agricultural and forestry practices because the atmosphere is in a crisis, and we cannot afford to cast aside any legitimate, environmentally beneficial approach to reducing the rate at which our climate is warming. Reductions from uncapped sectors, including agriculture and forestry must be harnessed if we are to resolve the climate problem.

EDF has always taken a strong position in this area because we see the opportunities: we have the on-the-ground experience to know that carbon offsets can be done well, with high integrity and transparency, delivering needed atmospheric benefits at low cost. We know we *can* construct a system under which science and a competitive market, not lobbying, determines the winners, and under which sound policy creates clear incentives for strong environmental performance.

2. A Sound Offsets Program—Three Principles

We all have a stake in achieving high standards of integrity for agricultural and forestry offsets. Farmers and land owners have a strong stake in demonstrating that a voluntary agricultural offsets program can secure verifiable greenhouse gas reductions while providing a steady flow of income for farmers, ranchers and land managers. Companies relying on flexibility mechanisms for compliance have a strong stake in demonstrating that offsets are fungible with on-site emissions reductions. And the millions of Americans at risk from a changing climate have a strong stake in receiving the full climate security protections promised.

A sound offsets program need not be terribly complex; indeed, just a few key elements are necessary for success in this area:

1. *Science is a key element of integrity.* It's no secret that, when countless industries, landowners, trade groups, and even nations seek to sell offset credits, some will be of good quality, and some will not. That's why it's critical that decisions about program structure—especially which activities are eligible and how they are accounted for—be science-based, and periodically amended as new information and research informs the field.

2. *Program rules must ensure integrity.* Detailed technical rules and protocols for the program will be necessary. The watchwords here are “real, surplus, verifiable, and permanent.” The emissions reductions behind an offset credit must be *real*, *additional* to what would have otherwise occurred, *verifiable*, and if not literally *permanent*, they must at least be verified to exist during the time they are in use, and replaced at the contract’s end.¹
3. *The program must be practical.* The program has to be science-based, and it has to be accountable to providing real benefits. But rules and procedures supporting those two principles also have to be designed with the landowner and project developer in mind to ensure that transactions costs do not serve as a deterrent to beneficial projects.

3. ACES – Opportunities for Improvement

EDF has been and still is a strong supporter of the America’s Climate and Energy Security Act. The House of Representatives has put together comprehensive legislation that addresses the issue of climate change in a serious and thoughtful manner. But opportunities for improvement remain – including for the design and implementation of the offsets program.

The core elements of the offsets program are critical confidence-builders for the market that will ultimately place a monetary value on these emission reduction activities. Buyers must have an extremely high degree of confidence in the atmospheric benefits of offsets activities and the integrity of the program behind them. It is the landowners who will feel the financial loss and the industries that need these tons who will face higher compliance costs when they feel obliged to turn to other emissions reduction options.

The following list includes some of the key areas that must be improved, with respect to the principles articulated above, if the offsets market is to fulfill its potential. I elaborate a little on each item following the list. EDF is committed to working with Members, agencies, farmers, foresters and landowners, and other interests to ensure the establishment of a sound and practical offsets program.

¹ Permanence is an important attribute for all creditable emissions reductions activities. However, in agricultural and forest sector sequestration activities, the attribute of permanence needs to be defined and implemented in a manner that is practical and recognizes how real world projects will be managed. Some activities that reduce or avoid emissions – reducing methane emissions from animal operations, for example – do not present permanence challenges because the atmospheric benefit they create in any one year can’t be “reversed” by subsequent events. In the case of activities like sequestration projects, however, additional protocols are appropriate, because atmospheric benefits created today can be reversed tomorrow. In effect, this essentially involves establishing a system of carbon “leasing,” wherein a project’s benefits are valid for compliance purposes only during the term of the contract. At the contract’s conclusion, it is either renewed, or the credits are cancelled or replaced by the buyer/emitter with reductions from another source. Either way, the atmospheric benefits are maintained. This concept of “carbon leasing” (also sometimes described as “temporary crediting”) is a practical way of addressing the issue of permanence in relevant project types, because it allows a stream of projects, even if they are individually reversible, to be used to create a permanent benefit to the atmosphere. We were pleased to see it reflected in Title V of ACES.

- An independent scientific advisory board is essential to help secure program integrity and to help expert agencies adapt quickly as new information is learned
- Expert agencies – informed by science – should determine the practices eligible to earn offset credit
- In order to provide benefit to the atmosphere the timing of offset activities must be related to the timeframe of the emissions they offset
- While programs to promote early action are important – care should be taken to ensure that only high quality practices are credited
- Regardless of which agency the Congress determines should have regulatory responsibility for the offsets program, provisions are necessary to provide adequate transparency and accountability.

An independent scientific advisory board is essential to help secure program integrity and to help expert agencies adapt quickly as new information is learned.

In prior versions of the House bill, rulemaking agencies would have received, and (absent good reasons) had to use, guidance from a panel of independent scientists and other experts. This guidance covered a wide range of methodological issues ranging from allowable project types to guidelines for determination of additionality. The idea was to ensure that agency decisions were informed by the best science available and to provide flexibility for more timely modifications as science and data on program performance progresses. In the area of forest and agriculture activities, though, this board has now been replaced by a more standard advisory board in section 531. While it is required to include members “qualified by education, training, and experience to evaluate scientific and technical information ...” there is no requirement for any specific credentials, scientific or otherwise, nor are there conflict of interest provisions. While Section 531 does require the Board to provide its guidance to the Secretary of Agriculture within 6 months of enactment, there is no requirement that the guidance be heeded and the guidance described does not include one of the most critical areas originally envisioned for it: the determination of eligible project types.

Expert Agencies – informed by science – should determine the practices eligible to earn offset credit.

The House bill appears to codify an extensive list of project types, which is described as the minimum set of activities eligible for credit under the offsets program. In section 503 the Secretary of Agriculture is allowed to add to the list, but there is no express provision for deleting project types from the list, even if they are ever found to undermine the intent of the legislation. Though it’s certain that scientific research and practical experience will teach us a lot more about these areas in the coming years, it might literally take an act of Congress to keep the project list current with the science as the program matures. As described above though – it appears that an independent scientific advisory board has no role here. Regardless of the merits of the project list with respect to the information we have today in 2009, new research and experience will inevitably inform the public’s understanding of the value of these various activities. To ensure public and market confidence, the program has to be able to adapt to emerging science.

In order to provide benefit to the atmosphere the timing of offset activities must be related to the timeframe of the emissions they offset.

The most basic requirement of an offset credit is that it effectively neutralizes – “offsets” – an emission from a regulated source, like a coal-fired power plant. Under sections 504 and 507 of ACES, though, activities that began up to 11 years before the program starts in 2012 are eligible to earn offset credits. In other words, pollution created in 2012 can be considered neutralized by someone continuing to do in 2012 exactly what they were doing in 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, and/or 2011. This does not provide new protections for the atmosphere.

EDF supports early action, and in fact sections 740 and 795 of ACES already provide a large reward for early actors: no less than 1% of allowance value will be given to entities that can demonstrate that they reduced emissions (or sequestered extra carbon) in the years leading up to enactment. Crucially, those allowances will be retired – not sold to entities that need allowances in the future – thus preserving the environmental integrity of the bill. But treating conduct that has preexisted for up to 11 years as “additional” – that is, as a genuine way to neutralize future emissions – doesn’t help us toward our future emissions goals.

While programs to promote early action are important – care should be taken to ensure that only high quality practices are credited.

Section 740 describes “early action” programs that are eligible to provide offset credits for the early years of the program. The language generally describes State and voluntary programs that have met standards for transparency and public input, but it also allows “other programs” that can meet these same standards. But there are no provisions to ensure that “other programs” provide high quality offsets that meet the well-accepted standards of “real, surplus, verifiable, and permanent.”

The section 740 provision is problematic on its own, but a cross-reference to Title V, Section 504 makes the problem much more serious. Section 504 defines the key concept of “additionality,” or how we know that an offset credit is making a real difference for the atmosphere. It requires that eligible agriculture and forestry offset projects be commenced after 2009 (again, to ensure that the benefits are not pre-existing), but then exempts from that requirement any credits generated through a program authorized under section 740. Taken together, sections 504 and 740 provide a clear pathway for entities to be paid, from 2012 forward, for activities that are not additional (because they have already been in place for up to a decade or more) and that may be of questionable value in any case, due to lax accounting standards.

Regardless of which agency the Congress determines should have regulatory responsibility for the offsets program, provisions are necessary to provide adequate transparency and accountability.

A significant issue of controversy as the House finalized ACES was which agency, EPA or USDA should have the regulatory responsibility for managing the offset program. In the end, ACES creates two offset programs, one in Title II, administered by the EPA, and the other in Title V, administered by the USDA.

This debate has to some degree overshadowed the many important roles (that are not regulatory in nature) that USDA needs to play to ensure that farmers, foresters, and landowners are prepared to participate in a robust offsets market. These include providing USDA science expertise on quantification and other methodologies, establishing demonstration projects for a wide variety of practices in regions around the country, and providing technical assistance to landowners including assistance determining potential financial yield of projects. USDA will also be critical in providing the data on land use and agricultural practices that are needed to develop offset protocols and monitor and evaluate program performance.

If USDA is to have regulatory roles and responsibilities, additional provisions are necessary to provide adequate transparency and accountability. The offsets program administered by the Secretary of Agriculture as set out in Title V of H.R. 2454 does not have the transparency and accountability protections that are necessary. It does not even incorporate the conforming accountability protections that are included in the greenhouse gas emission reduction and the offset program carried out by the Administrator of EPA.

For example, the offsets program carried out by the Administrator of EPA authorizes decisions, rooted in science, to add or remove eligible project types from consideration as offsets. See H.R. 2454 §311 adding §733 to the Clean Air Act. By comparison, the Secretary of Agriculture may only add eligible project types but may not remove items from the list, in response to science. See H.R. 2454 §503(c). The Secretary, like the Administrator, must have the authority to take corrective actions anchored in science, whichever direction they point.

Further, the offsets program carried out by the Administrator of EPA commands transparency. In issuing offset credits, the Administrator is directed to publicly disclose both her determination about the quantity of greenhouse gases that have been reduced by the offset project and the verification report on which the determination is based. See H.R. 2454 §311 adding §737 to the Clean Air Act. In contrast, the Secretary bears no duty to disclose his determination about the certification of offsets, the quantity reduced or the underlying verification report. See H.R. 2454 §507(a). The Secretary, like the Administrator, must be directed to make public his certification of greenhouse gas emissions that have been reduced by an offset project and to disclose the basis for that decision.

Further, the offsets program carried out by the Administrator of EPA is built on a firm foundation of public accountability. The EPA offsets program, like most other major elements of the greenhouse gas emissions reduction program under H.R. 2454, is interwoven within the fabric of the nation's clean air law through a series of judicious conforming amendments. For example, the Administrator has strong information-gathering authorities to assess compliance with the law. See H.R. 2454 §337(c) (conforming with Clean Air Act §114). Where non-compliance is revealed, the Administrator may take action that restores compliance and may seek penalties to deter future non-compliance through the application of long-standing federal enforcement authorities. See H.R. 2454 §337(a) (conforming with Clean Air Act §113). Citizens that are adversely impacted may take action to address non-compliance, as they have for

four decades under our nation's time-tested clean air laws. See H.R. 2454 §337(d) (conforming with Clean Air Act §304).

The law governing EPA's actions generally ensures that the Administrator's regulatory decisions are transparent and accountable. EPA's decisions are plainly subject to public notice and opportunity for public comment, and EPA must disclose the basis for its action in a publicly accessible docket. H.R. 2454 expressly subjects EPA's regulatory actions to the rigorous rulemaking procedures adopted as part of major administrative reforms in the 1977 Clean Air Act Amendments. See H.R. 2454 §337(e)(3) (conforming with Clean Air Act §307(d)). And, like all other final agency decisions under the nation's clean air laws, the Administrator's actions related to greenhouse gases and emissions offsets are subject to judicial review in a prescribed timeframe and in a specific venue that is designed to ensure policy stability for all stakeholders. See H.R. 2454 §§336, 337(e)(2) (conforming with Clean Air Act §307(b)).²

To ensure public confidence in the value of offsets, agriculture and forestry offsets should not be held to a lesser standard of accountability. More is needed to guarantee the accountability that is the hallmark of rigorous policy-making. Congress needs to include the following essential elements in the offsets provisions:

- Authority, anchored in science, to add and remove listed offset types in response to new information;
- Full public disclosure of offset certification decisions and the underlying verification reports;
- Information-gathering authorities similar to section 114 of the Clean Air Act;
- Federal and citizen enforcement to restore compliance and deter future non-compliance similar to sections 113 and 304 of the Clean Air Act; and
- Robust public rulemaking procedures and judicial review provisions similar to section 307 of the Clean Air Act.

Improvements we must achieve

I was glad to be asked to testify today because I would like to make it absolutely clear that a sound offsets program is achievable, and indeed essential, if we are to meet the emissions levels and timing set forth in this legislation. The offsets market must work, for a number of reasons: if quality concerns cloud the program, the environment will suffer, regulated industries will face

² The greenhouse gas provisions administered by EPA are conformed to the Clean Air Act's long-standing judicial review provisions. Section 307(b) of the Clean Air Act, 42 U.S.C. §7607(b), provides that EPA's national policy actions are subject to judicial review only in the U.S. Court of Appeals for the District of Columbia and establishes a statute of limitations. Petitions for judicial review must be filed within 60 days from the date the notice of EPA's action appears in the Federal Register. Intended to promote "even and consistent national application" of EPA's implementing regulations and protect "the integrity of the time sequences provided throughout the Act." S. Rep. No. 91-1196 at 40-41 (1970), section 307(b) of the Act describes the exclusive means of judicial review of Clean Air Act regulations. See *Harrison v. PPG Industries, Inc.*, 446 U.S. 578 (1980); *Adamo Wrecking Co. v. United States*, 434 U.S. 275 (1978).

significantly higher costs, and landowners will be deprived of a significant financial opportunity. Conversely, the environment, buyers, and sellers will all benefit substantially from a sound offsets program.

4. Offsets Provide Environmental Benefits

Offsets generated through climate-friendly farming and forestry practices have multiple benefits, including benefits to ecosystems as well as the climate. They may either reduce emissions of the greenhouse gases (primarily carbon dioxide, as well as methane, nitrous oxide, and others) that cause climate change, or actually *remove* such gases from the atmosphere (because plants take up carbon from the atmosphere as they grow and store some portion of what they take up, “sequestering” this carbon in biomass and soils). In agriculture, farmers are adopting a wide variety of innovative practices that enhance uptake and reduce emissions of carbon dioxide or other greenhouse gases, such as no-till and ridge till planting, growing trees along stream banks, precision application of fertilizer, and cover crop choice. Livestock and dairy producers are also changing animal feed rations to reduce methane emissions and capping manure lagoons to capture methane and use it in place of fossil fuels.

In the domestic forestry sector, opportunities to increase carbon sequestration can include afforestation (planting trees on lands previously used for other purposes, such as agriculture), reforestation (replanting trees on recently forested lands where trees would not naturally regenerate, such as after fire in parts of the West), and avoided deforestation (for example, reducing the footprint of new development and thus reducing the amount of forest cut down). In addition, changes in timber management practices that may increase carbon sequestration include changes in fertilization practices, improved fire and pest management, modified harvesting practices to reduce carbon losses, and increasing the amount of wood/fiber produced per unit of land.

Our nation's grazing lands also offer many opportunities to increase carbon stocks through innovative management, including improved grazing practices and rangeland restoration. All of these activities on our croplands, forests, and rangelands, which collectively comprise the vast majority of our national land base, offer the potential to reduce GHG emissions or to remove carbon from the atmosphere, while also furthering important other agricultural and environmental objectives such as protection of wildlife habitat, water quality, soil conservation, and protecting open space and working landscapes.

Judicious use of carbon offsets provides the potential to address aspects of our carbon footprint that are impractical or impossible to capture through a nationwide cap. The EPA estimates that ACES would cover about 85% of national emissions by 2016. Of the remaining 15%, emissions from agricultural sources account for more than a third (around 6% of total emissions). Emissions from landfills and petroleum and natural gas process losses are the most significant sources of the final 9%.

Domestic agricultural and forest lands provide an opportunity not only to reduce their own emissions but to augment the other side of the carbon ledger—our “carbon sink.” In this country, the net effect of all land use activities (including forestry and agriculture) is to annually remove

around 1.1 billion tons of CO₂ equivalent,³ which equals 15% of the nation's gross annual emissions. There is potential to further increase the size of this sink – and to ensure that it does not decline in the future. In fact, a report by the Congressional Budget Office (CBO) indicates that the U.S. could, in theory, roughly double this annual carbon-capturing effect through enhanced agricultural and forestry sequestration.⁴

By driving changes in land use and land management practices, markets for offsets can create substantial public benefits in addition to climate change mitigation. Creating powerful new incentives for landowners to improve forests and manage agricultural land to conserve soils and increase the efficiency with which they use fertilizer would reduce the amount of non-point source pollution entering our waterways – one of the most difficult sources to control with regulation. Research suggests that the “co-benefits” associated with incentives for carbon sequestration would include increased wildlife habitat, better soil erosion protection, and improved water quality in streams and rivers. A domestic market for offsets would increase the incentives for conservation and sustainable management practices, as long as appropriate safeguards were in place. Federal and state conservation programs already provide mechanisms for delivering these services, but incentives for offsets could complement and possibly leverage the impact of these initiatives. These programs are crucial tools in our country's investment in preserving endangered species, reducing the chemical loading that contributes to the Gulf of Mexico “dead zone,” retaining the vital productivity of our nation's soils, and maintaining the health of ecosystems we depend upon.

5. Engaging Developing Countries in Meaningful Action

U.S. action to reduce our GHG emissions is absolutely essential. However, as we all know, US action by itself will not solve the problem. We must find ways to engage other major-emitting nations and enjoin them in efforts to curb emissions. This must be the case for both developed and developing nations. One of the most effective levers we have to engage major-emitting developing nations is through conditional access to our carbon market. Linking our carbon market with other nations can be a win-win situation for everybody: 1) Major-emitting developing nations can begin to help shoulder some of the responsibility for reducing global GHG emissions; 2) the U.S. can significantly reduce the overall cost of our domestic climate program; and 3) developing nations can use the carbon markets and the sale of offset credits to finance their investments in low-carbon technology, using money from the private sector to do so. We should only grant other nations access to our carbon market for activities that can satisfy the principles outlined at the beginning of my testimony. The U.S. should not grant access to the U.S. carbon market for international offset credits that do not meet these principles.

³ U.S. Environmental Protection Agency. 2009. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007*. <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>. While carbon dioxide (CO₂) is the most common heat-trapping gas, several other gases have heat-trapping properties of varying potency. For example, methane is about 25 times as powerful as CO₂, while nitrous oxide (N₂O) is about 298 times as powerful. CO₂-equivalents essentially allow conversion into a single metric for easier comparison.

⁴ The Congressional Budget Office. 2007. *The Potential for Carbon Sequestration in the United States*. Pub. No. 2931, CBO The Congress of the United States.

The ACES provisions on international offsets are a significant step in the right direction. The provisions reward major-emitting developing nations such as China and India with access to our carbon market only if they adopt absolute emissions frameworks against which their performance is measured. And the provisions allow for offset projects outside of such frameworks only from the world's poorest countries which make virtually no contribution to global emissions.

In addition, ACES allows for offset crediting for Reducing Emissions from Deforestation and Degradation (REDD). Deforestation and other land use changes accounts for about 15% of annual global emissions. For Indonesia and Brazil, emissions from deforestation comprise nearly three-fourths of their total emissions. Because of their forest sector emissions, Indonesia and Brazil are the third and fourth largest global emitters of greenhouse gases, after China and the U.S. The U.S. carbon market can provide the financial incentives needed to bring Brazil and Indonesia to the table and adopt programs to prevent deforestation. This will not only provide tremendous reductions in global greenhouse gas emissions, but will also greatly lower costs of the domestic cap-and-trade program.

An important aside - the term "offset" is often used loosely to mean anything that is not part of our domestic cap. In particular, when talking about "international offsets," little attention is paid to whether the emission reduction was generated from a capped or uncapped sector in that other nation. We define a capped sector as one that requires absolute reductions below a defined reference level, while an uncapped sector can generate offsets credits by making reductions below a future business-as-usual projection. It is critically important to distinguish between 1) a true offset, namely an emission reduction that occurs in an unregulated sector of the economy, and 2) reductions in sectors with established absolute emissions limits. This second situation is simply national-level emissions trading between two nations that have both undertaken emission reduction commitments. In the context of developing countries where there are many low-cost opportunities for emissions reductions, linking our market to capped sectors that represent a substantial fraction of that nations emissions, be they electricity, or the forest sector, provides tremendous additional environmental benefit and cost-containment opportunities. We recommend including a clarifying change to ACES that for nations that adopt national REDD programs (i.e. mandatory, domestically enforceable limits on emissions), reductions from such programs should enter the U.S. market on the same footing as programs like the EU-ETS, and not through the offset provisions in the bill.

6. Agricultural and Forestry Programs Cut Costs and Create Jobs

Costs

EDF has long advocated use of offsets in a cap-and-trade system as a cost-effective means for regulated companies to meet their compliance obligations. We believe that the more affordable we can make reductions, the more ambitious we can be in establishing a truly protective climate goal. Offsets broaden the set of available options for complying with the requirements of climate policy by allowing companies greater flexibility to make GHG reductions wherever they are cheapest across the economic and physical landscape. With appropriate rules to ensure the

integrity of the reductions, offsets can dramatically lower the costs of complying with any emissions reduction target.

The potential to “bank” allowances and/or offset credits for use in future periods further increases the cost-containment and risk management benefits of offsets. Together with the flexibility of banking, the availability of low-cost offsets not only reduces compliance costs in the current year, but also increases opportunities for companies to build up reserves of cheaper compliance options that provide a form of insurance, buffering against higher allowance prices or more volatile allowance prices during future periods.

ACES allows companies to meet their compliance obligation by using a national total of up to 2 billion tons per year of credits from domestic and international “offsets,” including a maximum of 1 billion tons from domestic agricultural and forest carbon sequestration. The bill also allows companies to use up to 1 billion tons per year of international offset credits, with the possibility of increasing this limit up to 1.5 billion in the case that use of domestic offsets is expected to be less than 0.9 billion tons. These credits include credits from international activities outside of a national cap-and-trade program, and include credits from activities to reduce emissions from tropical deforestation and, possibly, forest degradation. While international offsets will trade on a one-for-one basis with emissions reductions in the covered sectors through 2016, starting in 2017 emitters must tender 5 international tons of offsets for every 4 tons of U.S. compliance, while domestic offsets continue to trade on a one-for-one basis. The bill also allows for the 2 billion ton annual limit on total offset use to be increased or decreased based on a recommendation of the President to Congress. Separately, the ACES bill allows unlimited compliance use of allowances from comparably capped trading systems in other countries.

ACESA contains several cost-containment provisions, including (i) domestic and international offset credits; (ii) output-based rebates to compensate energy-intensive trade-exposed manufacturing sectors; (iii) unlimited banking; (iv) unlimited year-ahead borrowing (effectively a two-year compliance period); (v) firm-level borrowing from one to five years in the future, at 8% annual interest (prepaid at the time of borrowing) up to a maximum of 15% of any one year’s compliance obligation; (vi) a minimum reserve price of \$10/ton for the regular allowance auctions; and (vii) a strategic allowance reserve. The reserve is initially stocked with allowances that would be initially withheld from the cap and made available at auction if allowance prices exceed 160% of their three-year average. The auction proceeds are used to buy international offset credits from reduced deforestation to help refill the original size of the reserve.

These are important cost management tools. The EPA’s analysis of the ACES bill that came out of committee considered ten different scenarios for meeting the bill’s greenhouse gas reduction targets – embodying different assumptions about the future availability and cost of nuclear power, as well as energy efficiency provisions, output-based rebates, and the ability of firms to use international offset credits for compliance.⁵ The report concludes that the use of offsets, and international offsets in particular, can dramatically reduce the cost of the program.

⁵ U.S. Environmental Protection Agency, Office of Atmospheric Programs, “The EPA Analysis of the American Clean Energy and Security Act of 2009 – H.R.2454 in 111th Congress.” June 23, 2009. Available at:

EPA found that allowing domestic offsets to trade on a one-for-one, rather than on a five-for-four basis (as was the case in the original draft of the bill), lowers allowance prices by about 7% in each year.⁶ Relative to a benchmark policy scenario representing the bill as passed out of committee, the EPA found that maintaining the bill's domestic offsets provisions but eliminating international offsets increases forecasted prices by an estimated 89%. This has a greater impact on the allowance price than any of the other modeled scenarios, and this finding is robust to alternative assumptions about the availability of international credits over the first ten years. The EPA also found that the provision allowing the international offset limit to increase if the domestic offset limit is not used up lowers the projected allowance price by 11%. Moreover, EPA finds that the ability to use international offsets increases by about two-thirds the cumulative "bank" of excess allowances built up through 2030. This also allows the United States to accelerate the reductions in the bill, while reducing overall costs and providing regulated companies with a buffer against higher allowance prices in the future.

Separate economic modeling, in which EDF participated, indicates that the international forest carbon provisions play a critical role in building the allowance bank and reducing the costs of a US policy similar to ACES. The introduction of offset credits for reduced deforestation lowers allowance prices by an estimated 22% based on the cost estimates used in the EPA analysis.⁷ The potential price reductions grow to more than 40% if the program includes all sources of international forest carbon, not limited to deforestation reductions. These analyses suggest ACES already contains a powerful suite of cost-containment measures to reduce costs throughout the program, and the bill also provides mechanisms for allowing more offsets into the system if needed.

Jobs

By providing financial rewards for new uses of America's vast rural lands, a carefully-designed offset program will generate new economic opportunities – and new jobs. A project to capture (and potentially to use as fuel) the methane that is currently emitted by a dairy or hog farm, for example, will require skilled workers to design and build the necessary equipment and to operate and maintain the equipment once installed. Planting of new forests on land currently used for other purposes will likewise require trained workers. And the crucially important task of ensuring the quality of offsets will call on the talents of another set of trained and skilled workers. The vast majority of these jobs will need to be done by workers in the U.S. Building a methane capture facility on a North Carolina hog farm, for example, cannot be outsourced to workers in another country.

<http://www.epa.gov/climatechange/economics/economicanalyses.html>

⁶ U.S. Environmental Protection Agency, Office of Atmospheric Programs, "The EPA Preliminary Analysis of the Waxman-Markey Discussion Draft – The American Clean Energy and Security Act of 2009 in 111th Congress," April 20, 2009. Available at: <http://www.epa.gov/climatechange/economics/economicanalyses.html>

⁷ Murray, Brian C., Ruben Lubowski, and Brent Sohngen. June 2009. *Including International Forest Carbon Incentives in Climate Policy: Understanding the Economics*. Duke Nicholas Institute for Environmental Policy Solutions. NIR 09-03. Available at: <http://www.nicholas.duke.edu/institute/forest-carbon.html>.

An offset program will also provide major new opportunities for entrepreneurship. Because there will be money to be made by finding new and better ways to sequester carbon, and to reduce carbon emissions from uncapped sectors, a well-designed offset program will stimulate technical research and business innovation in America's rural economies.

7. Conclusion

I will just restate what I said earlier... all of us, the farmer, rancher, landowner, emitting company and average citizen - have a stake in establishing a sound, science-based offsets program. Carbon offsets must represent real, measurable, verifiable benefits to the atmosphere. If they don't, all of our efforts in this process will be for naught, and we very well may push the atmosphere past a point of recovery. We cannot afford to fail in this area. Thank you for the opportunity to speak to you today.

Environmental Defense is a leading national nonprofit organization representing more than 500,000 members. Since 1967, we have linked science, economics and law to create innovative, equitable and cost-effective solutions to society's most urgent environmental problems. Environmental Defense is dedicated to protecting the environmental rights of all people, including future generations. Among these rights are clean air, clean water, healthy food and flourishing ecosystems. We are guided by scientific evaluation of environmental problems, and the solutions we advocate will be based on science, even when it leads in unfamiliar directions.

Environment and Public Works Committee Hearing

July 14, 2009

Follow-Up Questions for Written Submission

Questions from—

Senator Benjamin L. Cardin

It's been noted that the most destructive greenhouse gas emissions from the agriculture sector is occurring in developing countries like Brazil and Indonesia where deforestation and agricultural conversion lead to high carbon emissions. I think it is important to make this distinction between US agriculture and that in developing countries. As my colleagues repeatedly note, US action on greenhouse gas reductions would have little impact without action from the rest of the world. That is why I would support legislative provisions to establish international carbon sequestration offsets to protect vitally important forests around the world. Yet, I think domestic offsets for forest and food growers will be important to the viability of our domestic agricultural industry in a carbon constrained economy.

What recommendations would you make in order to strike the necessary balance between international offsets that maximize global carbon sequestration and domestic offsets to keep America's farmers competitive in the new economy?

Wisely crafted climate legislation provides Congress with a rare opportunity to help multiple stakeholders at the same time. By setting science-based emission-reduction goals, Congress can spare all Americans the enormous costs of unchecked climate change. By adopting a flexible, cap-and-trade framework that permits the use of both international forest credits and offsets from U.S. farms and forests, Congress can dramatically undercut the financial drivers of deforestation worldwide and also provide domestic landowners with an additional income stream for the important ecosystem services they provide. And, of course, the more flexible the program is for regulated entities here in America to comply with, the lower the costs will be for everyone.

If Congress heeds the call of scientists around the world and establishes strong emission-reduction targets, there will be plenty of opportunity for international forest credits and domestic offsets both to be part of the solution. For example, the House legislation would require emissions cuts of 17 percent below 2005 levels by 2020 and more than 80 percent by the year 2050. Regulated entities, taken together, could use up to 2 billion offset credits in any year – 1 billion from domestic sources and 1 billion from international sources, providing a tremendous opportunity for domestic agriculture and international forest protection.

The bill contains additional mechanisms to further advance the protection of international forests. Under the bill, if in any year the EPA determines that domestic offsets would not likely to be available in sufficient supply to reach the legislative limit, then more international offsets could be used. In later years, the bill would discount international offsets, requiring five tons of greenhouse gases to be reduced or sequestered to generate four credits. The bill would also set aside some revenue from the auction of emission allowances to provide additional forest protections and help build the capacity of less-developed tropical-forested nations to participate in the global carbon market.

Of course, the bill would also provide additional benefits for domestic agriculture. It would set aside other revenues from the allowance auction to help farmers quickly take advantage of the emerging carbon market by producing offset credits. The creation of a robust offsets market in which many American farmers will choose to participate will spur additional economic growth in rural areas and will strengthen U.S. agriculture. The economic analysis by the U.S. Department of Agriculture issued July 22, 2009, cites estimates that the sale of offsets could produce annual net returns to farmers of \$1-2 billion per year from 2012-18, rising to \$20 billion per year in 2050, and predicts that this new revenue stream will make agriculture a net winner under climate legislation.

Senator Amy Klobuchar

Mr. Krupp, in regards to an international greenhouse gas emissions offsets program, how can we verify such offsets meet stringent standards for efficacy? If a company were to purchase an offset to prevent deforestation in Brazil, how can we ensure a different forest in Brazil won't be cut down instead?

The situation you describe -- in which the demand for forest products or forested land from one area of a nation's forest "leaks" to another, unprotected area of forest and results in it being cut -- must be accounted for if the incentives to protect forests that a carbon market can provide is to result in net benefits. The House legislation would address leakage by awarding offset credits to tropical forested nations only on the basis of net reductions. Only reductions in deforestation from a national baseline could be credited. Under the House bill, the situation you describe would result in no credits being awarded.

Senator James M. Inhofe

1. *Do you believe no-till or reduced tillage practices are an effective tool for sequestering carbon? Can you explain the use of chemicals in no-till farming? What happens 10 years later if a farmer decides to revert back to conventional tillage, are all of the sequestration benefits lost?*

Offset credits should be real, additional, verifiable, enforceable and permanent if they are to be environmentally effective. But even activities like the kind you suggest that increase sequestration of carbon in soils or forests, though inherently temporary, can still produce permanent benefits for the environment.

When considering the crediting of temporary activities several steps must be taken. First, the contract length must be long enough that changes in sequestration can be measured with sufficient accuracy. Second, if sequestered greenhouse gases are released during the life of the contract a mechanism must be established to ensure their replacement, for example by requiring sellers or buyers to establish a physical or financial set-aside or by requiring them to purchase private insurance. Third, the credits must be valid for use only for the term of the contract; after the contract period they must expire.

Regulated entities that used a temporary offset for compliance could renew the contract for another term, purchase other offset credits or allowances for retirement, or reduce emissions. This kind of "offset renting" can thus provide a flexible way to benefit regulated entities and farmers alike by increasing the options for both under a cap and trade system.

I have stated previously that no-till offers carbon benefits, and I strongly believe that it is an environmentally beneficial practice. While no-till has been associated with the increased use of herbicides to control weeds, farmers are increasingly finding ways to apply chemicals more precisely and are adopting other innovative approaches to reducing chemical use without sacrificing yields. The establishment of a robust, voluntary agricultural offsets market will only accelerate innovation by ensuring that environmentally beneficial changes in the management of their farms make economic sense for many more farmers.

2. *You state that any offset program must provide real benefits. As you may know, Climatologist Chip Knappenberger predicts that under ACES, the global temperature would be lowered by 0.1 degree Celsius by 2100. Do you consider this to be a real environmental benefit?*

In your testimony you discuss the need for the U.S. to be a leader in engaging developing countries in fighting climate change. Do you feel that a program that cuts global temperatures by 1/10 of one degree demonstrates the ability of the United States to be a leader on this issue, or encourages other countries to follow

our lead, especially when analyzing the economic risks and impact this legislation may have on the domestic economy?

Global warming is a global problem to which the United States has been the largest historical contributor. So far, most of the developed world has committed to cutting emissions but the United States. But U.S. action is critical if the world is to convince large, rapidly developing nations like China to do its part. In the past, the U.S. leadership has produced successful global agreements to tackle other global threats, like that posed by the emissions of CFCs, which were destroying the world's protective ozone layer. We do not measure the success of those efforts by the amount by which the U.S. alone has reduced its emissions, but by the impact of our leadership in shaping global policy and the collective decrease in emissions that has been the result.

Just as the United States benefitted from a global agreement to reduce CFCs, it will benefit from an agreement to reduce greenhouse gas emissions. The pressure to phase out CFCs led to the development and deployment of numerous new technologies. A cap on carbon will unleash tremendous amounts of innovation that will propel America to the forefront of the coming low-carbon economy.

3. *While you say that the provisions in ACES reward major- emitting developing nations such as China and India with access to our carbon market only if they adopt their own emissions framework it also punishes them if they don't, by imposing a border tariff on nations that have not adopted a climate change program. The World Trade Organization will undoubtedly challenge this action, and India is already planning on filing a WTO challenge should this become law. Do you feel that enacting trade repercussions makes the United States look like a leader on this issue? What is your view on the possible international trade battle this could provoke, should the United States take these actions?*

It is important for any U.S. legislation that caps our emissions of global warming pollution to contain incentives for other nations to do their share to tackle this global problem. And it is appropriate that such legislation also contain mechanisms to prevent emissions leakage – the migration of high emitting activities like steel and cement manufacturing, for example, to nations with less stringent regulations – in the meantime, to ensure emissions aren't simply shifted from one part of the planet to another. Border measure provisions can be an important way to do both, and they are being considered by other nations, not just the United States. Indeed, the World Trade Organization itself, together with the United Nations Environment Program, noted in a recent report on trade and climate change policy that “[c]oncerns about competitiveness and carbon leakage, particularly in relation to energy-intensive industries, have recently come to the forefront of climate change discussions, triggered by the consideration and implementation of emissions trading schemes in several developed countries.” (*Trade and Climate Change*, WTO, 2009) The report further notes that debate in the academic literature on trade law has been “prolific on the extent to which GATT and WTO rules would apply to border measures.” Given the lack of any consensus about how existing trade law or even which provisions of trade law should apply, and the fact that WTO trade disputes are highly

fact-specific to a particular measure and how it gets applied in practice, any assertions at this time regarding possible trade conflicts would be highly speculative, at best.

4. *In your testimony you discuss the jobs in the agriculture industry that will be generated by things like planting new forests and building a methane capture facility on a North Carolina hog farm. However, according to the Energy Information Administration, when the price of gasoline and diesel oil increases, as it is predicted to under Waxman-Markey, for every dime that is added to the price of fuel, U.S agriculture sustains a loss of over \$400 million dollars, a loss which clearly does not facilitate job growth. Additionally, in a study done by the National Black Chamber of Commerce, a cap and trade program would cause agriculture employment to decline by 59,000 workers, and contribute to the loss of over 2.78 million American jobs by 2030. Clearly you see that your prediction of job growth is quite different from other studies. How do you explain this?*

The report you cite was prepared for the National Black Chamber of Commerce by Charles River Associates (CRA) ("Impact on the Economy of the American Clean Energy and Security Act of 2009 (H.R.2454)"). CRA uses a model that is not peer-reviewed and consistently estimates economic impacts that are much higher than those of any other model.

In comparison, the Energy Information Administration (EIA), which provides energy statistics for the Department of Energy (DOE), the Congressional Budget Office (CBO) and the Environmental Protection Agency (EPA) have all published their own analysis of the American Clean Energy and Security Act. Taken together, these studies represent the most credible and objective analyses available of the economic impacts of this legislation.

Although their analytical approach differs, they all agree on the basic results:

- The U.S. economy will grow strongly under the proposed legislation; and
- Costs for the average American family, taking into account increased energy and gasoline prices, are small and affordable.

Looking specifically at gasoline prices, although they would rise, the effect is tiny. In the year 2020, the EIA and EPA forecast that gasoline prices will be only 14 to 20 cents per gallon higher than they would be without any policy. On average, that's less than 3 cents per gallon per year relative to the no-policy case. That's an imperceptible change, especially compared with the large swings in gasoline prices we have seen in recent years — sometimes as large as a dollar over the course of a few months.

In terms of unemployment, the effects these studies of the bill find are much smaller than CRA's estimates. The EIA predicts that by the year 2020, total employment in the U.S. will be 12.1% higher than it is today if Congress were to pass H.R. 2454. In 2030 it will be 17.8% higher. While CRA's grossly exaggerated job loss figures weigh in at 2.7 million, EIA projects modest losses of only 0.1% relative to the baseline (which amounts

to about 188,000 in 2020 and 782,000 in 2030) – and this is without taking into account the technological innovation that would be spurred due to the bill and therefore vastly underestimates the accompanying creation of green jobs. EIA also finds that by the year 2020, the U.S. unemployment rate will be 36.1% lower than it is today if Congress passes H.R. 2454. By the year 2030, the unemployment rate will be 33.3% lower.

HR 2454 creates abundant opportunities for U.S. agriculture in the form of bioenergy production incentives and offsets. The creation of a robust offsets market in which many American farmers will choose to participate will spur additional economic growth in rural areas and will strengthen U.S. agriculture. The economic analysis by the U.S. Department of Agriculture issued July 22, 2009, cites estimates that the sale of offsets could produce annual net returns to farmers of \$1-2 billion per year from 2012-18, rising to \$20 billion per year in 2050, and predicts that this new revenue stream will make agriculture a net winner under climate legislation.

Of course, it's critical to point out that none of these figures consider the benefits to farmers of avoiding the catastrophic consequences of climate change, which have enormous implications for farmers, ranchers, and forest landowners since their livelihoods are so directly connected with weather and climate.

5. *While you support ACES, partly due to the agriculture jobs it will create, over 46 national and state agriculture associations publicly oppose this bill. Clearly, one would have to assume all of these agriculture groups could not possibly oppose a bill that would actually create jobs in their own industry. Do you feel that every one of these associations is incorrect in their opposition to the bill and their predictions of the damage that will be done to their own industry under this legislation?*

Federal climate legislation will create jobs in both rural and urban communities. As I mentioned in my testimony before the Committee on August 6, 2009, Duke University studies demonstrate how a cap on carbon will be a powerful economic driver over the next few decades. Behind every low-carbon solution is a long supply chain that will spawn new jobs in mining, component manufacturing, final product manufacturing, design, engineering, construction, marketing, and sales.

Again, as noted above, the creation of a robust offsets market in which many American farmers will choose to participate will spur additional economic growth in rural areas and will strengthen U.S. agriculture. The economic analysis by the U.S. Department of Agriculture issued July 22, 2009, cites estimates that the sale of offsets could produce annual net returns to farmers of \$1-2 billion per year from 2012-18, rising to \$20 billion per year in 2050, and predicts that this new revenue stream will make agriculture a net winner under climate legislation.

6. *Domestic offset credits can provide a vital form of cost containment in a cap and trade system. But wouldn't you agree that placing arbitrary restrictions on offset credits would unnecessarily limit a cap and trade program's ability to reduce*

compliance costs, likely resulting in inflated allowance prices? Wouldn't it be fair to say that eliminating such unnecessary restrictions would strengthen a program's ability to contain compliance costs in a way that would not decrease overall emission reductions?

Domestic offset credits can indeed provide a vital form of cost containment in a cap and trade system. For example, the EPA predicts that in a scenario without any international offsets, the allowance price would be 89% higher than under the provisions of the House legislation, HR 2454.

The bill restricts the total number of allowances (domestic and international combined) to 2 billion tons annually, specifying that at first, no more than 1 billion domestic offsets can be used and no more than 1 billion international offsets can be used. EPA's analysis of HR 2454 suggests that the total quantity of offsets (domestic and international combined) may fall slightly short of the 2 billion total offset limit. This suggests that raising the 2 billion limit would not necessarily result in significantly greater cost savings.

7. *It is my understanding that allowing broader use of offsets will not affect a climate change program's overall cap on emissions or its ability to reduce emissions. To the contrary, isn't it true that a broader use of offsets will create incentives to develop new technologies, products, and processes that reduce emissions, thereby achieving emissions targets at a substantially lower cost and with greater incentives for innovation?*

Yes, compared to a climate change program that did not permit the use of any offset credits, allowing the broader use of offsets will result in lower costs and create more opportunities for low-carbon innovations in more sectors of the economy, while not affecting the overall reductions in emissions that the program achieves.

8. *As you're probably aware, some recent climate change proposals have sought to set limitations on how many offset credits an individual source can use for compliance purposes. Wouldn't you agree that such a limitation undermines the market's ability to identify the most efficient and cost-effective emission reductions? Moreover, wouldn't the unrestricted use of offsets allow project developers access to the full market and all of its participants?*

Firm level limits on the use of offset credits for compliance purposes, as has been proposed in House-passed climate legislation, is simply one way to administer the overall limit on the use of offsets, which, in the House bill, is 2 billion tons per year. If they operate in an economically rational manner, entities regulated under the climate proposal would still experience market forces much as they would if offsets were unlimited: they will evaluate their own internal ability to reduce emissions. If they discover opportunities to make reductions themselves more cheaply than they can purchase allowances or offset credits on the market, they will reduce their own emissions.

But if it is less expensive to purchase offsets or allowances, regulated entities will purchase them, and they could purchase offset credits up to their individual limit for offsets so long as those were cheaper, which would be good for offset project developers, so long as they can meet the standards for quality established in law and regulation.

9. *It is my understanding that any new cap and trade program without a concrete list of eligible offset projects creates uncertainty in existing carbon markets that could disrupt ongoing efforts to mitigate climate change and discourage investment in new offset projects. Wouldn't you agree that any cap and trade program should include a nonexhaustive list of project types that will be eligible for offset credits, such as a list of projects that already are well-established and have proven track records for delivering real, permanent, verifiable, and additional emission reductions?*

The most important way to avoid the kind of disruptions in the market that you express concern about is to avoid including a concrete list of eligible offset projects in legislation. Instead, Congress should direct the agency implementing an offsets program to quickly identify and approve categories of offset projects for which the most robust methods are already available for ensuring that offsets are of high quality. Congress should further direct the implementing agency to prioritize rulemakings for those categories of offset projects that are the most proven.

Congress should also direct the implementing agency to rely on the advice of experts with training and experience in quantifying and crediting offset (and who do not have a conflict of interest). The methods for quantifying and crediting offset projects are technical, complex, and highly specific to the type of offset project being credited. Many of the offset protocols already developed have served voluntary markets with lower standards for quality than will likely be necessary in the Federal compliance market that a cap and trade bill would create. Congress should delegate such decisions involving highly technical and subject-specific issues to those agencies with the most expertise.

Indeed, it would cause far greater disruption if Congress raised false hopes in the market by deeming a category of offsets eligible today, only to discover tomorrow that little methodology exists that is robust enough to ensure that offset credits are of sufficiently high quality. Far better for Congress to ensure that the implementing agency gets the rules right from the beginning.

10. *There has been a substantial amount of investment in voluntary carbon markets prior to 2009, much of which has been done by "early movers." It seems to me that these early movers should be given some sort of recognition for their efforts. Wouldn't you agree that this would be the equitable thing to do? As such, shouldn't any climate change program recognize emissions reductions achieved by eligible offsets prior to the establishment of any climate change program?*

Providing credit for early action is an important tool. The federal climate change program should recognize, encourage, and provide credit for real and verifiable reductions of GHG emissions resulting from actions taken by entities prior to the enactment of federal legislation, including actions to comply with state and regional GHG cap-and-trade programs. Credit for early action should be awarded from within a set-aside of allowances created specifically for the purpose of rewarding early action. Congress should ensure that there is an adequate set aside of allowances under the cap for crediting real and verifiable early action reductions. Congress should direct the implementing agency to make use of what will be a limited setaside for this purpose with the need to provide meaningful awards for qualifying early actions. Congress should require applicants for credit for early action to provide evidence adequate to demonstrate the reductions are real and verifiable and are voluntarily undertaken as part of a GHG reduction or energy efficiency effort.

Senator Mike Crapo

I understand that internationally, forest carbon offsets serve the multi-faceted purpose of greenhouse gas reduction, lowering the cost of compliance in the U.S., and ensuring land remains forested. However, a tree will only remain standing for as long as the value of offsets surpasses that of cutting it down for agricultural production or other purposes. Taking Brazil for example, how long will it be before that happens?

The current economic drivers of deforestation vary by country. In some countries, the drivers are soy bean production, cattle raising, other agricultural commodities like corn, sugar cane and cassava, charcoal production and commercial logging. Many of these activities involve high production costs that translate into relatively low net profits per acre, making them attractive investments only at a large-scale. Low per-acre net profits means that protecting forests through the carbon market can, at fairly low carbon prices like those projected by EPA, fundamentally shift the economics of deforestation in favor of forest protection.

In Brazil, for example, forest protection can be more profitable than soy and cattle, even at emissions allowance prices of less than \$10 a ton. Recent research indicates that up to 94% of Amazon deforestation could be stopped at allowance prices of as low as \$5 per ton. In Bolivia, where soybean is the number one driver of deforestation, a 2004 study concluded that a carbon price of less than \$5 in 2005, rising to less than \$10 by 2012, would make forest conservation more profitable than forest destruction in that country.

Senator BOXER. Thank you very much.

And our last witness is the minority witness, the American Farm Bureau Federation.

Sir, we welcome you. Mr. Stallman, Bob Stallman.

**STATEMENT OF BOB STALLMAN, PRESIDENT, AMERICAN
FARM BUREAU FEDERATION**

Mr. STALLMAN. Thank you, Madam Chair, members of the committee. I am here today representing the American Farm Bureau Federation.

How you deal with the issue before you is critical to farmers and ranchers. There is no question it will affect our bottom line. Under our best estimates of the legislation passed by the House using EPA assumptions, it will take \$5 billion out of farmers' pockets. Using the same rosy EPA scenario, but imposing the 2050 costs as if they occurred in 2012 gives a reduction in farm income of \$13 billion. Most likely, the reality would be worse.

So we care a great deal about what legislation you approve and what the agricultural offsets will be. With that in mind, I would like to respectfully challenge all members of the committee to ask a few questions. Your answers will tell you a lot about what kind of bill that you produce.

No. 1, what do we want to accomplish? If we really want to change what the world's climate will be in 40 or 100 years, then the House-passed bill is not the answer. I believe Administrator Jackson said as much last week when she testified before this committee.

Two, do we want to keep U.S. products competitive internationally while living up to our WTO obligations? If so, then the House bill is not the answer. It could spur trade retaliation and promote leakage of carbon emissions. And with that leakage, you will see economic activity and jobs leaving our country.

Three, is this about energy independence for America? Again, the House-passed bill doesn't measure up. It spells out what we can't do. It doesn't really say how we will make up for lost energy sources. The best way to have an honest productive debate is for everyone to lay their cards on the table. If we do, one thing becomes pretty clear: this debate isn't about the climate. It is about fossil fuels. Everyone knows it, so let's deal with that reality.

If the proponents honestly want to revamp our energy so the use of fossil fuels is minimized, then they have an obligation to tell us their alternative. Arbitrary percentages about efficiencies, mandates for emissions limitations, promotion of international offsets are simply roundabout ways of saying that they don't have an energy plan. While emission caps will be written into law, the market and power generation structures implied in EPA's current analysis are just a set of assumptions.

From an agricultural perspective, there are several changes we believe must be incorporated in the bill. One, the legislation must, at a minimum, include the provisions negotiated by Chairman Peterson of the House Ag Committee. We are encouraged by statements of Senator Harkin that say he wants to do that and will seek to strengthen them. Even with such changes, you need to remem-

ber not all agricultural producers will be able to avail themselves of offsets.

Two, other nations must be a part of the solution, or U.S. competitiveness will be sacrificed and climate reduction goals will fail to be achieved. Absent global commitments, we will be engaging in the economic equivalent of unilateral disarmament.

And three, Congress must not create a hole in America's energy supply. If fossil fuels are taken out, something else must be substituted. We must plug the hole created by the bill or run the risk of congressionally mandated shortages that will create spikes in energy prices. The agricultural sector, in particular, is poorly equipped to absorb or pass on such costs.

It is very reasonable to estimate that costs that we currently project to occur in 2030 or 2040 might well shift forward to 2015 or 2020. Acreage shifts might be more drastic than envisioned, and they could well involve greater shifts from crop acres to forestry as well as acreage currently dedicated to forage production shifting into forestry.

And once again, some agricultural producers will never benefit from the legislation under any scenario, yet these same producers will incur the increased fuel, fertilizer and energy costs that their counterparts do.

We are very open to the idea of including an off ramp in the legislation. Such an approach could kick in due to job loss, a lack of an international agreement, an inability to sufficiently commercialize renewable technologies, or a lack of alternative energy sources. Without some mechanism to protect agriculture, we are greatly concerned about the potential adverse impacts on farmers and ranchers.

Some say agriculture will benefit. If EPA has their way, we will only be allowed to plant trees. Any other benefits will depend to a large degree on where the producer is located, what he or she grows, and how his or her business model can take advantage of any provisions in the legislation.

Not every dairy farmer can afford to capture methane. It is a capital-intensive endeavor. Not every farmer lives in a region where wind turbines are an option. Not every farmer can take advantage of no-till. Not every farmer has the land to set aside to plant trees. Yet every farmer has production costs to meet.

Nearly all of us rely on fertilizer and we all drive tractors. We all use energy in our production. We know our costs will rise, and frankly we are very concerned about the impact of this legislation on our livelihood. And I urge the committee to consider these factors as you take up legislation.

Thank you again for the invitation to testify, and I look forward to questions.

[The prepared statement of Mr. Stallman follows:]



Statement of the American Farm Bureau Federation

To: Senate Committee on Environment and Public Works

Regarding: Climate Change

**Presented By:
Bob Stallman
President**

July 14, 2009

*AFBF is the unified national voice of agriculture
working through our grassroots organizations to enhance
and strengthen the lives of rural Americans and to build strong,
prosperous agricultural communities.*

Farm Bureau represents more than 6,000,000 member families across the nation and Puerto Rico with organizations in approximately 2,500 counties.

Farm Bureau is an independent, non-governmental, voluntary organization of families united for the purpose of analyzing their problems and formulating action to achieve educational improvement, economic opportunity and social advancement and, thereby, to promote the national well-being.

Farm Bureau is local, county, state, national and international in its scope and influence and works with both major political parties to achieve the policy objectives outlined by its members.

Farm Bureau is people in action. Its activities are based on policies decided by voting delegates at the county, state and national levels. The American Farm Bureau Federation policies are decided each year by voting delegates at an annual meeting in January.

My name is Bob Stallman. I am President of the American Farm Bureau Federation and a rice and cattle producer from Columbus, Texas. Farm Bureau is the nation's largest general farm organization, representing producers of every commodity, in every state of the nation as well as Puerto Rico, with over 6 million member families. I appreciate the invitation to address the committee this morning on an issue that has generated tremendous debate within our organization.

As we have looked at this issue, we have tried to stay grounded in facts, and as someone once said, facts are stubborn things. We also believe very strongly that this issue, like others, ought to be grounded in sound science.

What do the facts and the science tell us about climate change?

Number one, data seems clearly to indicate an identifiable warming trend. The data also shows that carbon dioxide concentrations in the atmosphere are increasing and that man-made emissions have increased for a number of decades.

But those aren't the only facts, and they don't tell the whole story. We also know, for instance, that the climate models that have gotten so much attention did not predict the cooling that has occurred over the last decade. We know that there have been times in the earth's history when carbon concentrations in the atmosphere were greater, when temperatures have been cooler or warmer – in short, there are any number of variables that probably affect the earth's climate in ways that we simply don't know. We know that reputable scientists have raised questions about the computer models that are being used.

There are three other salient facts that affect Farm Bureau's thinking on this matter.

1. The legislation that passed the House of Representatives will have virtually no impact on the earth's temperature in the year 2050. I believe Administrator Lisa Jackson indicated as much in her testimony earlier before this committee.
2. The legislation that passed the House will have enormous economic consequences for our country and the agricultural sector.
3. Unless other countries, such as China and India, adopt similar emissions restrictions, the United States, if it adopts this legislation, will be embarking on a fool's errand at great cost to our economy and our children and grandchildren.

At the outset, we must acknowledge that unilateral cap-and-trade legislation will have little or no impact on the climate. That is because greenhouse gas (GHG) emissions are global; to the degree they are an issue that demands attention, they require a global response. A ton of GHG emitted in China is the same as a ton of GHG emitted in Virginia. Regulating emissions in Virginia without regulating emissions in China will have little or no effect on the environment. Most experts agree that if the House legislation worked exactly as planned, it would not lower

temperatures by more than a few tenths of a degree by 2050¹. Most experts agree that the United States cannot solve this problem alone. EPA Administrator Jackson, in testimony before this committee last week and in response to a question on a chart showing the climate impacts, replied, "I believe that essential parts of the chart are that the U.S. action alone will not impact CO₂ levels."

We all support leadership by the United States. But don't forget one thing: leadership only occurs when people are following you. If they're not, then it's the economic equivalent of unilateral disarmament. Leadership does not require the creation of inflexible restrictions on our economy with the hope – which so far seems largely unfounded – that major emitters in the rest of the world will follow. The House bill would actually restrict our negotiating flexibility and leverage with the rest of the world. It is absolutely imperative that other countries, such as China and India, bear their fair share of the burden.

Agriculture producers rely on foreign markets as sources for their products. Similarly, the international marketplace relies to a large extent on us to produce the food and fiber necessary to feed and clothe the world. The United States exported more than \$100 billion of agricultural products in 2007 and only the global recession pulled us off that number in 2008.

The increased fuel, fertilizer and energy costs that will result from H.R. 2454 will greatly impact the relationship of American producers with the rest of the world. U.S. agriculture is an energy-intensive industry that relies to a large extent on international markets.

These increased input costs will put our farmers and ranchers at a competitive disadvantage with producers in other countries that do not have similar GHG restrictions. Any loss of international markets or resulting loss of production in the United States will encourage production overseas in countries where production methods may be less efficient than in the United States.

The production of food and fiber in the United States is important both to the U.S. and to the world and must ensure that our producers are not put at a competitive disadvantage.

The provision adopted by in the House, which effectively imposes a border tariff on nations that have not adopted limits on carbon emissions, does not solve the problem – it compounds it. There is a growing amount of discussion on the issue among trade experts, but it will almost certainly be challenged in the World Trade Organization (WTO). India in fact has already said that if it becomes law, it will file a WTO challenge. It would be exceedingly difficult to enforce, and it does not enjoy the support of the administration. Other trade measures in the bill (allowances for manufacturers impacted by international competition, cash rebates, etc.) are also at best murky when viewed against the whole set of trade rules.

Absent a carefully constructed global agreement that includes developed and developing economies alike, no amount of punitive domestic regulation will either affect global climate or prevent severe repercussions for the U.S. economy.

¹ See Chip Knappenberger, "Climate Impacts of Waxman-Markey (the IPCC-Based Arithmetic of No Gain)," MasterResource, May 6, 2009, at <http://www.masterresource.org/2009/05/06/climate-impacts-of-waxman-markey/> (June 30, 2009).

A true solution must include every nation. As an example, Least Developed Countries (LDCs) emit 20 percent of global carbon dioxide yet under Waxman/Markey, they are excluded from having to take action. Though they are struggling economies, simply excluding them ignores their emissions and does nothing to assist them in resolving emissions concerns. Instead, it provides incentives not to change and gives them free reign to export carbon-heavy products to the United States at a significant competitive advantage. If this is truly a global problem then we must have buy-in from all nations if we are to find a solution. However, global buy-in will not be achieved if we impose our standards on other nations. This is neither good domestic policy nor good foreign policy.

We cannot and should not unilaterally attempt to regulate global carbon dioxide emission. This can only be accomplished through a comprehensive global agreement with contributions by all nations or the results on our economy will be devastating. Unilateral action is the wrong course.

Several times in the course of mark-up in the Energy & Commerce Committee, the members considered proposals that would have provided an "off-ramp" for the cap-and-trade program. In other words, the program would sunset unless similar commitments were made by other countries. In the absence of an international agreement covering all nations, such an approach would make far more sense than a border tariff that will exacerbate international tensions and not accomplish what it is designed to do.

For Farm Bureau, there are two overriding question to this debate, and they are ones we urge members of the committee to confront in no uncertain terms.

1. What do you wish to accomplish?
2. Does it make economic sense for farmers and ranchers?

If you believe that anthropogenic carbon emissions are causing global warming, then recognize the simple fact that the only, let me repeat, the only, solution is an international agreement. Doing it alone through legislation is a recipe for disaster for the American economy and for farmers and ranchers.

If, on the other hand, the goal is to wean our economy off the use of fossil fuels, then go about the real business of coming up with an energy plan for America. That means that whatever bill is adopted must recognize what will happen when our nation starts starving itself of carbon-based energy forms. If the economy is starved for energy, then prices for energy are bound to increase. Don't let that happen. If you want coal and oil to play less and less a role in our energy mix, then figure out what will take their place – before you put our nation on a diet that is bound to result in lower economy activity and a depressed Gross Domestic Product (GDP).

In other words, if Congress is going to discourage certain forms of energy by imposing greater costs on them, then provide our economy an alternative. The Global Warming community is very articulate on what they are against. Unfortunately, they're not quite as vocal about what they support. No one is against wind energy, solar energy, or other renewable sources of supply. But they will not replace significant portions of our base load capacity. Even so, the legislation should incorporate an "off-ramp" similar to the one I mentioned earlier for international efforts.

If we find that the level of available renewable power is not being produced, then the emission caps should be relaxed accordingly.

It's not enough simply to be against something – we must be for something as well. A cap-and-trade program will effectively create a hole in our energy supply. It's Congress's job to "plug that hole," not simply create it. Any legislation considered must be realistic and straightforward.

In that regard, we were pleased that the Senate Energy and Natural Resources Committee included some modest language (Sections 312 and 313) in the legislation it recently approved related to nuclear power. We expect that the Majority Leader will seek to combine the Energy Committee bill with legislation produced by your committee, but we believe that a true commitment to nuclear power goes beyond a Sense of the Senate resolution. Congress should make an unequivocal commitment to fostering and promoting an aggressive nuclear program and ensure that cap-and-trade emissions limits are not imposed in the absence of a robust program.

The second critical issue is that any legislation must make economic sense for farmers and ranchers, who produce food and fiber for our country and the world.

On the issue of offsets for agriculture, we strongly support the efforts undertaken by Chairman Collin Peterson (D-Minn.) in the House. We firmly believe that there must be an agricultural offsets program and it should be administered by the U.S. Department of Agriculture (USDA). We are also heartened by statements of the Senate Agriculture Committee Chairman Sen. Tom Harkin (D-Iowa) that he will use the Peterson provisions and build upon them in the Senate. We support such an effort.

According to the latest EPA *"Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005"* updated in 2008, agriculture and forestry emit between 6 percent and 7 percent of the total GHG emitted in the United States. The same EPA document also indicates that agriculture and forestry have the potential to sequester between 15 percent and 20 percent of total U.S. emissions. The USDA says that currently these two sectors sequester about 11 percent of total emissions, so these sectors are responsible for reducing more GHG emissions than they emit. It stands to reason that any climate change policy should seek to maximize these contributions from agriculture.

Any climate change legislation will also impose additional costs on all sectors of the economy and will result in higher fuel, fertilizer and energy costs to farmers and ranchers. Cost increases incurred by utilities and other providers resulting from climate change/energy legislation will ultimately be borne by consumers, including farmers and ranchers. Electricity costs are expected to be one-third higher than would otherwise be the case by 2040. EPA's own estimates suggest coal costs could rise by more than 100 percent by 2020. Unlike other manufacturers in the economy, agricultural producers have a limited ability to pass along increased costs of production to consumers. It is extremely important that those costs be minimized to the greatest extent possible. Farmers are heavily dependent on the price and availability of inputs such as fertilizer and crop protection products. A viable agriculture sector includes viable fertilizer and chemical industries. The fertilizer industry has already gone through major restructuring due to higher natural gas prices and the closure of many U.S. production facilities. More than half of the

nitrogen fertilizer used in the United States is imported. Another rise in natural gas prices as EPA projects would likely result from this legislation could threaten the remaining fertilizer manufacturing facilities in the United States. This would make us even more dependent on foreign fertilizer imports.

Offsets are an important part of any cap-and-trade program. Because they are only useful to the extent they are cheaper than installing new technology, they serve as a cost-containment mechanism for entities trying to meet cap obligations. That means that fewer costs will be passed on to consumers, thus lowering the cost of compliance of a cap-and-trade program.

Agriculture and forestry are particularly well-suited to provide offsets to capped entities. Agriculture and forestry are not capped sectors under the bill, and would therefore be eligible to provide such offsets. There are a number of identified agricultural and livestock practices that have been proven to reduce or sequester GHG. These range from shifts out of conventional to conservation tillage, forest management, nutrition management, even afforestation. In order to achieve the full potential for GHG reductions and sequestration, climate policy should allow farmers and ranchers to adopt these practices to provide offset credits to capped entities. Adoption of these practices also provides other environmental benefits besides carbon reduction or sequestration. These other benefits may include reduced soil erosion, improved wildlife habitat, or increased water quality, to name a few.

The provisions establishing an agricultural and forestry offsets program within USDA added by Chairman Peterson go a long way toward meeting those challenges. This program recognizes a wide array of carbon reduction and sequestration practices in which agriculture and forestry can contribute to a cap-and-trade policy. It also allows "early actors" to a limited extent to participate in the offsets program, thus somewhat eliminating the perverse incentive of penalizing proactive farmers and rewarding latecomers. USDA understands the needs of producers and can work effectively with them to develop projects that meet the needs of the cap-and-trade market as well as the needs of producers. USDA also has the resources and the network to work effectively with farmers and ranchers to administer an agricultural offsets program.

Any cap-and-trade legislation must contain an agricultural and forestry offset program such as the one included in the House passed bill. Additionally, we believe domestic offsets should take priority over international offsets.

But inclusion of an offset program is not the complete answer. Even with a robust agricultural offsets title as indicated above, however, the bill still does not make economic sense for farmers and ranchers. There are several reasons for this.

First, a number of agricultural sectors will not be able to benefit from an offsets program. The attractiveness of offsets as a possible revenue stream for producers and a cost-containment measure for consumers should not cloud the fact that there are a number of agricultural producers who will not be able to benefit from offsets. That is because their production methods and practices are such that they have little or no opportunities to sequester or reduce GHG. There are clearly winners and losers in agriculture in the offsets markets. As a general farm

organization, AFBF represents all commodities, and we must consider all of their interests and concerns. Let me cite just a few examples:

- Dairy – Some people suggest that dairy operators will benefit by installing methane digesters. These digesters are expensive and can easily run into regulatory hurdles.
- Fruit & Vegetables – Many specialty crop producers simply do not have the opportunities to qualify for offsets.
- Wheat & Corn – Many growers in these commodities are looking for monetizing benefits from no-till agriculture. Yet, EPA has explicitly said that no-till does not provide sequestration opportunities.

There are other examples. Cotton producers, for instance, do not have opportunities for benefitting from offsets. Western ranchers whose operations are heavily dependent on the use of federal lands for livestock forage also have very limited offset opportunities. These ranchers are constrained in the types of grazing practices they can employ on federal lands, and federal lands themselves do not qualify for offset opportunities. Potato producers also have little or no opportunity to provide offsets. In fact, many areas in the West in general that are the most coal-dependent are also the areas that have limited offset opportunities. Thus, they will face higher costs with little opportunity to offset those costs.

EPA suggests that there are no revenues to return to the sector from reduced tillage or no-till practices. It appears to be their view that land management practices have already adjusted sufficiently to the point that there is little additional carbon sequestration left to be gained by shifts to no-till or other conservation tillage practices in the future. If the EPA's view is allowed to prevail, offset opportunities for an even more significant segment of our sector will be foreclosed, and carbon sequestration opportunities will be lost. Not all areas of the country are able to productively adopt conservation tillage practices, however, thus further restricting their offset possibilities.

Yet, these producers will incur the same increased fuel, fertilizer and energy costs as their counterparts who can benefit from an offsets market.

In addition, revenue from offsets will defray only a portion of the increased input costs resulting from a cap-and-trade program, and not all of the costs. Producers will still face the prospect of increased input costs without the ability to pass on those costs. H.R. 2454 was amended to defer auction of emission allowances for a significant portion of the total allocation, a factor that really delays but ultimately does not remove overall program costs. More free emission allowances also means a lower price of carbon and a lower demand for offsets. As the price of carbon and offsets rise, producer input costs will rise as well. We have not, as of yet, been able to identify any scenario where the costs of cap-and-trade will not exceed revenues from offsets. And that is even before we factor in any transactional costs associated with development, monitoring or verification of offsets that might be incurred by producers.

From a broader perspective, Farm Bureau's goal has been to contribute positively to the debate over climate change. We certainly hope this committee will do the same.

I would like to provide a general discussion of how we view the economics of cap-and-trade. I must caution the committee, however, that it is very difficult to give a precise and accurate economic assessment of H.R. 2454. That is so for several reasons:

1. Nearly all the economic figures surrounding this bill are based on EPA's analysis provided to the committee either in April or June;
2. These economic projections are keyed to a specific set of assumptions ranging from unfettered access to nuclear power to unveiling of carbon capture and sequestration technology; and
3. Given that EPA favors the legislation and was directed by Chairman Henry Waxman's (D-Calif.) staff to use certain assumptions, we believe it is safe to say any cost estimates I provide you today are not only minimal but are probably unrealistically optimistic.

Let me give the committee a flavor for the kind of assumptions that underpin the legislation:

1. EPA in its analysis used assumptions "provided by committee staff on the use of allowances"² that:
 - o Increased carbon capture and sequestration bonus allowances;
 - o Provided that necessary allowances would be deficit neutral; and
 - o All remaining allowances would be returned to households in a lump sum fashion.
2. EPA in its analysis used committee staff directions on the commercialization of Carbon Capture Storage (CCS) technology. EPA assumed this technology would be affordable and commercially available starting in 2014, whereas most other estimates are for 2020 or 2025 or beyond. None are in place today.
3. EPA in its analysis used previous assumptions by MIT³ on the degree to which developing nations, such as China, would engage in similar emissions-reduction policies. For China and India, for example, this assumes that these countries (and others in the developing world) "would adopt a policy beginning in 2025 that returns and holds them at year 2015 emissions levels through 2034, and then returns and maintains them at 2000 emissions levels from 2035 to 2050."
4. Yet, EPA notes⁴ that "While this analysis contains a set of scenarios that cover some of the important uncertainties when modeling the economic impacts of a comprehensive climate policy, there are still remaining uncertainties that could significantly affect the results."
5. A large share of emissions reductions stem not from the policies in the bill but from reduced GDP as a result of the economic recession, as well as earlier policy changes enacted in the *Energy Independence and Security Act*. The source for these emissions reductions is the latest (2009) Annual Energy Outlook.

Earlier analysis by EPA of the Lieberman/Warner proposal looked at the effects on carbon prices and other economic variables if the fundamental assumptions regarding nuclear power and other portfolio mix shifts did not occur. Without that addition of nuclear power generation, carbon

² *EPA Preliminary Analysis of Waxman-Markey Discussion Draft*, 4/20/09 available at <http://www.epa.gov/climatechange/economics/economicanalyses.html#wax>, page 10

³ *Assessment of U.S. Cap-and-Trade Proposals*, Report No. 146, April 2007

⁴ *Op. cit.*, page 4

prices and associated energy costs almost doubled compared to the earlier base case. It is critical that we understand how sensitive EPA's analysis of this bill is to these underlying assumptions. Certainly one should know those answers before taking the bill to the floor. In fact, we strongly recommend the committee require EPA to provide analysis using assumptions similar to those contained in Scenario 7 of its Lieberman/Warner proposal study. Because while the caps will be written into law, the market and power generation structures implied by EPA's current analysis are just a set of assumptions.

Let me cite just two examples.

In the MIT study mentioned earlier, the authors point out that they "limited nuclear electricity generation to that possible with current capacity on the basis that safety and siting concerns would prevent additional construction. With strong greenhouse gas policy such concerns may be overcome, especially if other major technologies such as carbon capture and storage can not be successfully developed, run into their own set of regulatory concerns, or turn out to be very expensive."⁵ In other words, a carbon-less world might be so expensive that nuclear energy becomes a viable source of electricity generation. The authors go on to say that the "fate of CCS is the mirror image. With nuclear limited, CCS expands beginning in 2020 to about 18 EJ in 2050. When nuclear is allowed to compete on economic terms, some CCS is viable but losing out to nuclear after 2040, when the CO₂-e price has risen substantially. Coal generation without CCS disappears in either case. These relatively detailed results help illustrate the scale of effort required to meet these policy constraints. There are just over 100 nuclear reactors in the U.S. today, and so a six-fold increase in nuclear generation would require the construction of approximately 500 additional reactors. If nuclear cannot penetrate the market the scale issue is not avoided but instead is transferred to CCS, requiring siting and construction of about the same number of new CCS plants."

Those are enormous variables.

The second example was articulated recently in a story discussing the Waxman-Markey bill's allocation of about \$200 billion for CCS technology. Pointing out the almost unprecedented level of money (six times greater than the amount contemplated in legislation considered in the Senate a year ago, according to the author), an article⁶ in the trade press nevertheless quoted an energy researcher as saying CCS may never even materialize.

"At the most optimistic, this bill is the beginning of a revolution. Or it could just be a flash in the pan," said Kevin Book, managing director at energy research firm ClearView Energy Partners." Another expert, Sarah Forbes at World Resources Institute, was quoted as saying she was not sure the funding was enough. Still others pointed out technological and legal issues that have not been answered.

These are just two examples of the kinds of assumptions that underlie the House bill. It is nearly impossible to evaluate exactly how such scenarios will play out, nor does it seem reasonable, given the magnitude of the unknown, that everything will come out just right.

⁵ MIT study, op. cit., page 32

⁶ "Carbon Capture and Storage Moves to Center Stage of cap-and-trade Debate", *Climate Wire*, June 9, 2009

And bear in mind, again, that the legislation itself will have virtually no impact on global climate.

Let me point out one way that we believe it creates tremendous potential for problems in the future.

In order to facilitate passage of the legislation, sponsors of the bill generally decided not to auction off the allowances, as President Obama said he wished to do. Auctioning, according to the administration, would have raised more than \$600 billion. But in order to hold down the costs of the legislation to consumers, and thus get more votes for the bill in committee, the legislation's sponsors gave away more than 80 percent of the allowances for free.

It is not hard to imagine a scenario, in a year or two when the federal deficit remains quite large, for this administration or some members of Congress, when looking for revenues, to go back to the cap-and-trade program and utilize it as a source of revenue for the Federal Treasury by auctioning off the permits. Previous administrations have sought to auction off the radio spectrum as a way of raising money. Given the demands on the Treasury, we have little doubt that once put in place, a cap-and-trade scheme will provide an easy mechanism for some to look to as a way of hitting peoples' pocketbooks. It will be an energy version of the tobacco "sin" tax, revisited or the sweetener tax now being discussed, when the need arises to raise money.

Even laying aside that scenario, however, there is no question that the national effort to cap and then further reduce GHG emissions represents a significant restructuring of the nation's economy. While most policy options on the subject to date have not included production agriculture as a capped sector, agriculture would certainly feel the effects of limiting GHG output through the changes in the energy production industry. At the very least there will be increases in energy costs in general, but more specifically higher costs faced by sectors that provide inputs to production agriculture. As these costs are passed to agriculture, producers certainly will react but are constrained as to the extent to which they may respond. Additionally, higher energy costs faced by those sectors which purchase agricultural products will result in lower prices offered to producers.

Taking EPA's estimates of 2020 costs, AFBF projects input costs would rise by \$5 billion versus a continuation of current CO₂ policy. This \$5 billion essentially carries forward to a nearly full \$5 billion reduction in farm income. Corn production, with a heavier emphasis on energy-based crop nutrient requirements, would face some of the highest increases in costs with a rise of 9 percent. Conversely, soybean producers, due to a much smaller reliance on energy-based inputs, will only see costs move by 5 percent. Not surprisingly, this shift in costs is expected to lead to a shift out of corn and into soybean production. Overall, producers are expected to reduce slightly – by half a million acres or so – overall plantings in response to these higher costs.

But it is critical not to stop in 2020, even though much of the analysis conducted to date tends to focus on these early-year effects. As mentioned earlier, the full impact of the bill will not be realized until 2050. Conducting analysis of an industry as dynamic as agriculture for effects more than 40 years in the future is difficult at best and certainly subject to a great deal of debate. But the fact remains that this legislation is intended to set in law specific targets the economy

must meet by the time we get to 2050. It will set rules on how our children and our grandchildren must be prepared to farm to be in compliance with this bill.

EPA's estimates of how things will look in 2050 under this legislation suggest a substantially different world. For example, the 2020 CO₂ prices estimated by EPA come in at \$22.20 per ton – expressed in 2005 dollars. For 2050, CO₂ prices – again in 2005 dollars – by EPA's estimates are \$95.90 per ton. Consequently, the relatively minor adjustments discussed before for 2020 policy implementation pale in comparison to how the sector will be impacted by 2050.

Extending the same analytical approach used before, we have imposed those higher energy costs on the industry as if they occurred in 2012. Then we looked at the industry behavior under those new conditions.

Production costs under that scenario rise by \$13 to \$14 billion after the initial year's impacts. Here again, acreage shifts occur between commodities, with corn and other energy-intensive input crops giving land to less-intensive crops, primarily soybeans. Overall, producers shift out of roughly 1.5 million acres. Input costs averaged over the third to fifth year subsequent to the shock rise by \$13 billion, with nearly \$11 billion of that rise deriving from higher fertilizer costs. Overall, farm income is estimated to run \$13 billion lower than would be the case without CO₂ costs in the \$90+ per ton range. Further, consumer spending on food rises by just over \$13 billion.

Moreover, these are not the only shifts in acreage. Another area of concern is the potential for land to shift from farm to forest production and the consequences of such shifts. Some of this acreage will no doubt come from land currently devoted to pasture and forage production and would therefore place even greater limits on the cattle industry. It is also possible we may get some shifts out of crop production into trees if CO₂ prices were to rise sufficiently. Much more work is needed to understand the full effects of these potential land use adjustments.

There is also a potential revenue stream available by sales of crop residue as an input into the renewable electricity standard. Studies on this issue suggest the greatest contributor to this energy source will be corn stover, with wood chips and other forest management residue also providing a major source.

Removing stover from the field will, however, also remove some crop nutrients from the same field. Consequently, taking that residue off the field will require producers to increase their fertilization rates to keep up the same level of productivity. As has been pointed out more than once, fertilizer – especially energy-intensive fertilizers – are not cheap and are expected to rise even more due to this legislation.

Some studies suggest corn stover at current fertilizer and fuel costs will need to receive at least \$60 per ton in order to justify bringing the product to the field edge.

In conclusion, we remain very concerned about the broad potential adverse impacts of cap-and-trade on agriculture. Even though some say agriculture will benefit, that will depend to a great degree on where the producer is located, what he or she grows, and how his or her business

model can take advantage of any provisions in the legislation. Not every dairy farmer can afford to capture methane – it is a capital-intensive endeavor. Not every farmer lives in a region where wind turbines are an option. Not every farmer can take advantage of no-till. Not every farmer has the land to set aside to plant trees.

Yet, every farmer has production costs to meet. Nearly all of us rely on fertilizer. We all drive tractors. We all use energy in our production. We know our costs will rise. And frankly, we are very concerned about the impact of this legislation on our livelihood.

I appreciate this opportunity to offer these comments to the committee and will be pleased to respond to any questions.

Senator Amy Klobuchar

1. Mr. Stallman, you mentioned in your testimony that in a greenhouse gas emissions offset market there will be some farmers who will reap benefits and some who will not. You cited dairy, wheat, and corn farmers who may have a limited ability to benefit from an agricultural offsets market. Do you have specific suggestions for improving access to offsets for these farmers?

We must emphasize at the outset that this legislation will increase fuel, fertilizer and energy costs to farmers and ranchers. Chairman of the House Agriculture Committee Collin Peterson's efforts in drafting and adding an agricultural offsets title will help only those producers who are in a position to take advantage of the provisions; by definition, it cannot help all producers because not all can utilize these mitigation methods. Producers of cotton and specialty crops, fruits and vegetables for example, will have virtually no way to sequester carbon in their operations, yet they will without question be saddled with higher energy, fertilizer, transportation and chemical costs. Many of our livestock operators – including dairy producers - will have limited opportunities to mitigate their cost increases through offsets as methane digesters require significant amounts of investments for relatively low return. In addition, those producers who have invested in digesters often experience difficulty in selling their excess energy to the grid. Cost and energy issues will need to be addressed to make agricultural offsets viable.

As the bill is currently written, offset opportunities are somewhat limited for corn and wheat producers. The most common offset opportunity for these producers is reduced tillage and no-till, which sequester carbon dioxide in the soil. Approximately 40 percent of crop land is already in reduced or no-till, though these practices are not viable on some corn and wheat lands.

Offset opportunities could be increased by enacting a strong "early actor" provision that specifies that no-till practices adopted after January 1, 2001, will qualify for offset participation. The current provision leaves any "early actor" participation to USDA. Current legislation only allows for offset credits for carbon stored after the effective date of the legislation, not for carbon stored earlier. Enactment of a strong early actor provision will eliminate the otherwise perverse incentive that would encourage early actors to undo their carbon reducing practices for a time and then re-start them in order to be able to participate in the offsets program.

For wheat farmers, removing wheat straw for burning as a biomass in renewable electricity generation could be an option, but it is not without cost. Many producers keep stubble on the field in order to help limit erosion and to keep moisture in the soil. Budgets produced by University of Kentucky suggested 2007 costs for wheat or barley straw to run \$2.50 per small bale. Another suggested option is to utilize corn stover as a biomass fuel source. Here again, taking the stover off the field removes nutrients that must be replaced with other fertilizer sources, plus there is the cost of running the harvesting machinery. Estimates from Iowa State University suggest at current fertilizer prices it could run close to \$100 per acre to harvest stover.

It should also be recognized that much of the past research into developing new varieties of corn or wheat have focused on maximizing the grain yield of the crop and to minimize the amount of nutrients the plant devotes to the stalk itself. Making this kind of a 180 degree shift in focus toward the burnable or fermentable biomass will require decades of research.

Senator James M. Inhofe

1. What is your view on the opinion expressed by the Environmental Defense Fund describing the benefits, including the jobs that will be gained, to the agriculture industry under ACES?

Without doubt, the legislation will create jobs in areas that did not exist prior to its passage. The administrative and regulatory burden alone will require the creation of hundreds of new government positions to manage the program.

It is also true that the legislation will increase energy costs and any time there is an increase in one cost category it tends to reduce growth in other areas. According to the Energy Information Agency's study of H.R. 2454, there will be 600,000 fewer non-farm sector jobs in the country in 2030 than would be the case without the legislation. However, if there are difficulties in finding international offsets or building nuclear power plants the job losses would exceed 1.7 million. Manufacturing sector employment would be off by 9 percent.

For agriculture, there will likely be jobs created that did not exist previously. Some producers will construct methane digesters, however, these would be temporary jobs, and would not contribute to long-term employment. Some crop residues will likely be harvested for burning as renewable biomass in electricity production and will again require labor, but the source of labor will come from other sectors of the economy, where jobs have been lost.

A study of Spain's experience with "green jobs" is instructive. Spain made a significant effort to build renewable energy capacity through development of wind and solar power. The study found that for every "green job" that was created, 2.2 jobs in other sectors were lost. In addition, of those green jobs, only one in ten was a permanent job.

As production and fertilizer costs go up, consumer disposable income – and thus spending particularly on high-end food items – will be lower as we spend a higher share of our Gross Domestic Product (GDP) on low-carbon energy. This combination of higher input costs and lower overall demand will put pressure on the industry and will lead to lower farm income figures, such as those suggested by USDA. At the end of the day, our expectation is that the bill will reduce employment in agriculture, just as it will throughout the overall economy.

2. The Congressional Budget Office estimates indicate that ACES could add 77 cents to the price of a gallon of gasoline over the next ten years. Can you say what the impact this would have on the agriculture industry in America?

Agriculture is an energy-intensive business. Farmers and ranchers need gasoline and diesel to power the machinery they use in their operations, and to power the trucks that send their product to market. A rise in gasoline or diesel prices will add significantly to their input costs. With already tight operating margins, such increases will make it unprofitable for many to continue farming.

Increased gasoline and diesel prices also will affect rural communities much more than urban areas. Rural residents have farther to drive to stores and for other necessities.

For agriculture, it is important to recognize that not only will gasoline prices have an impact on the industry, but so will all energy-related costs. Upwards of 80 percent of the cost of producing nitrogen fertilizers, critical to corn production, is associated with the cost of natural gas.

We have examined the effects of the House bill utilizing the alternative energy cost paths suggested by the Energy Information Agency (EIA) in its latest analysis. For the base case, i.e. when everything works exactly as the crafters of the bill suggest, the cost of planting an acre of corn is expected to rise by 10 percent in 2030 relative to what would be the case without the legislation. But as EIA suggests, it will not take much of a diversion from those assumptions for the costs to escalate quickly. For example, if we are not able to expand the use of nuclear power, renewable biomass production and other energy sources beyond where we would otherwise be, the cost of producing that same acre of corn in 2030 will be \$50 per acre higher. If we also are not able to get international offsets, costs jump up \$136 per acre over what would be the case without the legislation. This amounts to a 44 percent rise in corn production costs.

These figures are only for 2030. As EIA says in the section, Challenges beyond 2030: "As previously noted, the modeling horizon for this analysis ends in 2030. Unless substantial progress is made in identifying low- and no-carbon technologies outside of electricity generation, the ACESA emissions targets for the 2030-to-2050 period are likely to be very challenging as opportunities for further reductions in power sector emissions are exhausted and reductions in other sectors are thought to be more expensive." <http://www.eia.doe.gov/oiaf/servicerpt/hr2454/index.html>

3. Being that 65% of farmer costs are dedicated to fuel, electricity, fertilizer, and chemicals, and that according to the Energy Information Agency for every dime added to the price of gasoline and diesel oil in one year, U.S. agriculture loses \$400 million annually - will your industry create new jobs under a cap and trade program?

The same points made in response to question 1 by Senator Inhofe apply here as well.

Senator Mike Crapo

1. *In your testimony, you said that "American Farm Bureau Federation (AFBF) projects input costs would rise by \$5 billion versus a continuation of current CO2 policy." Could you go in to more detail about how AFBF came to that figure?*

We developed this figure starting with analysis developed by the Energy Information Agency (EIA) on the Waxman-Markey draft. Recognizing that natural gas prices tend to drive nitrogen fertilizers, electricity and petroleum prices can play a role in potassium and phosphorus, we increased these particular inputs based on EIA's price increase projections under the bill. We also increased other energy costs consistent with EIA's analysis and then introduced that information into a large-scale model of the agricultural sector we operate at AFBF. The model allows for acreage to shift between crops as input prices, like energy and fertilizer, are modified. The model generates new demand levels and prices for crops as well as passing that new information forward to the livestock sector. With changes in feed costs driven by shifts in crop prices, the livestock sector also adjusts, attempting to pass those costs on to the consumer, both foreign and domestic. With fairly elastic export markets for meats, higher prices for cattle, hogs and poultry tend to limit the ability of the sector to see prices rise enough to mitigate production cost rises.

For example, the rise in fertilizer costs generated a reduction in corn plantings and an increase in soybeans as the production costs rose more for corn than soybeans. This reduction in corn plantings pushed corn prices up modestly, thereby raising feed costs for livestock.

The \$5 billion discussed in our testimony was consistent with the energy cost increases developed by EIA and again are associated not only with the direct energy cost rise, but the higher feed costs passed through to livestock producers as well.

It should also be pointed out that this result was very consistent with that reported by USDA in its analysis of the legislation. We did have some differences in how we expected fertilizer costs to shift with the boost in energy costs, but the methodology and general direction of the results for the medium- and long-term time frames under the USDA analysis was very similar.

We are currently in the process of updating our work utilizing EIA's energy price effects and will make it available upon completion.

2. In your testimony, you predict that because energy will become so expensive, farmers will switch for more energy intensive crops like corn to less energy-intensive crops like soybeans.

How would this scenario play out on the world market? In other words, wouldn't this just result in additional environmental degradation in countries that are already lack in the area of environmental regulation?

According to U.N. figures, agriculture contributes 18 percent to 20 percent of greenhouse gas emissions worldwide. The Environmental Protection Agency (EPA) says that U.S. agriculture contributes 6 percent to 7 percent of all U.S. emissions, and USDA figures indicate that agriculture and forestry currently sequester about 11 percent of all U.S. emissions. USDA attributes this difference to the fact that U.S. agriculture is much more efficient than agriculture in other parts of the world. U.S. producers emit less greenhouse gas per unit of production than anywhere else in the world. This means that if crop and food production shifted overseas (as an example, if farmers converted cropland to trees to take advantage of offset opportunities or if farmers lost export markets due to higher input costs) greenhouse gas emissions worldwide would actually increase.

EPA has made extensive use of the Forest and Agricultural Sector Optimization Model (FASOM) modeling system for United States agriculture. This system is maintained at Texas A&M University as well as at Duke University. We have been fortunate to obtain some of the model's output files that were developed in connection with a range of carbon prices as background to EPA's report on the bill. Under a scenario where CO₂ prices would start at \$30 per ton (2005 dollars) in 2010 and escalate by 5 percent per year thereafter, the United States is expected to effectively exit the soybean export market by 2050. In 2008, soybeans were the highest single commodity exported by value from the United States. And the industry is well on its way to repeating that record again in 2009. In other words, the legislation, based on analysis for EPA, would ultimately have us walk away from a positive trade balance of over \$10 billion from one commodity alone.

As we move away from these and other products there would be major restructuring of global grain and oilseed markets. Areas would need to be planted to meet the demand even as producers in other countries are encouraged by this legislation to keep land in forestry and out of crop production. This would further exacerbate the effects on global food supplies.

Senator BOXER. Thank you, sir.

Let me just say that the members of the National Association of Wheat Growers have a very different view than you, Mr. Stallman. And they say they have worked for a number of years to ensure that agriculture has a place in any climate change legislation and that producers are able to reap benefits, rather than except costs. And I think that is our job is to work with you, to show you that this change could well prove to be a boon for agriculture. A lot of people do believe it.

As I said, the Farmland Trust and others, the National Farmers Union, and I understand we have work to do.

I also want to point out and place in the record, and this is important, I think, for those who are naysayers to understand that the idea of cap-and-trade was created right here in this room years ago when we were fighting the problem with acid rain and what was happening. And we set up this cap-and-trade system, our predecessors did, and there was a prediction of the projected costs. And there was a prediction of emissions reductions. And it turned out that there were far more emissions reductions than were predicted and the costs, the actual costs, were five times lower than they were projected to be.

The opportunity of this mechanism allowing a price to be set—in this case on sulfur dioxide—in the private market really worked as a boon and surpassed our dreams for the program.

So you will be hearing more about that because people will make up stuff when it has to do with cap-and-trade, when we already have had the experience of cap-and-trade.

I want to talk about this nuclear plant issue, and Mr. Krupp, I think you more than anyone else there have worked with this bill in a broader sense because Senator Alexander has put out his plan, which he hopes the Republicans will adopt, on their solution to this problem. And it is 100 nuclear power plants by 2030, built by and paid for by the rate payers with no tax credits going to them at all.

He also has another part of his plan that deals with using future revenues from offshore oil drilling for battery research, and he would take that funding away from our parks and away from deficit reduction for use there. And he has a third piece which is \$8 billion for research from the taxpayers.

I want to hone in on the nuclear power plant issue. My understanding of the modeling by the EPA of the Waxman-Markey bill is that instead of 100 power plants being built by 2030, they show—the models—261 plants being built by 2050, with tax credits going to the rate payers.

So isn't it true to say that the Waxman-Markey bill, which will be the base of our bill, we are going to have some tweaks to it, would result in the building of more nuclear power plants and help to the rate payers?

Mr. KRUPP. Chairman Boxer, thank you for the question.

There is no question that nuclear energy now being produced is one of the zero-carbon alternatives. And as the head of General Electric's Nuclear Division said a few years ago, the best thing you could do for nuclear energy is put a cap on carbon.

My understanding is the EPA did not specify a particular number of plants, but I think you are right. The number that would be built would be in the range of what Senator Alexander has called for, certainly by 2050. The way I read the EPA modeling, it would be perhaps as many as 95 plants, new nuclear plants by 2050, and 35 extra plants by 2030.

Senator BOXER. OK. Well, just for the record, we called the modeler over at EPA, and they told us 261 new nuclear plants under the Waxman-Markey bill by 2050.

Mr. KRUPP. I think it depends on what size. They clearly specified how many kilowatts and I think the discrepancy—

Senator BOXER. This is 1,000 megawatts.

Mr. KRUPP. Yes.

Senator BOXER. One thousand megawatts.

In any event, I think it is very important that we understand that in the approach we are taking, we don't pick any winners or losers. We just say when there is a price on carbon, nuclear power plants will compete, solar, wind, geothermal, any other way that is clean in terms of carbon. And the beauty of that is it winds up you have more nuclear power plants, if this is your goal. And there are a lot of people in the Senate who support that goal.

I have a more reserved attitude about it, but the fact is I am not going to pick the winners and losers. The marketplace is going to do it. What I am going to work for is the ultimate safety of these plants and all those other things, but that is the fact.

So I want to ask Mr. Hopkins and Mr. Stallman a question. We will start with you, Mr. Stallman.

Will farmers benefit from a climate policy that increases efficiency in renewable energy and reduces fossil fuel consumption? And will those types of policies help protect you as farmers from higher prices, given the volatility in the fossil fuel market?

Mr. STALLMAN. Well, the answer to that, Madam Chair, is, it depends. I mean, what are the alternative sources going to cost? And in terms of volatility, producers are pretty good at dealing with volatility whether it is weather, whether it is prices, whether it is spikes in costs. But it really boils down to economics.

The energy we use on average in this country, 20.4 percent of our input costs are related to electricity. As an example, for the agricultural sector in California, has \$5 billion worth of energy-related cost. If the energy costs go up, if they go up 20 percent, that is an extra \$1 billion of expenses put on producers. If the energy costs go down, then obviously that reduces those input costs. So it depends on what the cost structure is.

Senator BOXER. Surely. But the one thing I hope, Mr. Stallman, you will think about is the fact that we import so much foreign oil, and we are at the mercy of a lot of people that don't like us. And there is proof positive that many of those countries turn around and use that income from our tax dollars, yours and your industry, to fight us, to fight us, not economically, but to physically fight us. There has been proof of that.

So I would just like you to think about in the long term what a better situation it would be if you could choose from other options.

I would ask Mr. Hopkins.

Mr. HOPKINS. Well, Rio Tinto is very interested in the future of coal. We are the second largest coal miner in the U.S. We are a foundation member of the FutureGen Alliance. Carbon capture and storage with coal is, I think, going to be the technology that brings us our long-term abatement goals. In the near term, the immediate term, that technology isn't going to be ready and we are going to have to take advantage of offsets. But in the meantime, we are going to become more efficient.

We are going to use renewable energy. In addition to supplying the coal that generates 6 percent of the electricity in the U.S., we supply the uranium that generates an additional 3 percent of the electricity in the U.S. So we are very interested in maintaining baseload power in the future. We think offsets are going to be a key component in keeping allowance prices down.

Senator BOXER. Thank you.

Senator Inhofe.

Senator INHOFE. Thank you, Madam Chairman.

Let me first of all, Mr. Hohenstein, I read portions of your statement, and then you repeated that just a few minutes ago, the suggestion that the 1 billion ton limit on domestic greenhouse gas offsets that are in the Waxman bill is roughly equivalent to sequestration potential of planting 170 million acres of trees. And according to the USDA Economic Research Service, in 2007 there were 310 million acres of harvested cropland in the United States. Now, if you do your math, that would be 55 percent would be taken out of production.

Now, I would like to ask if the USDA has done an analysis of how many acres of food production we would lose on that potential shift, and also how that would affect livestock prices. Have they already done it, an analysis?

[The referenced information follows:]



2007 CENSUS OF AGRICULTURE

Economics

In 2007, U.S. farms sold \$297 billion in agricultural products while incurring \$241 billion in production expenses. Income from sales increased 48 percent between 2002 and 2007, while production expenses increased 39 percent. In addition to receipts from sales, U.S. farms also received \$8 billion in government payments and \$10 billion in farm-related income in 2007.

	2007	2002	% Change
Market Value of Products Sold			
All Farms	\$297 billion	\$201 billion	+48
Average Per Farm	\$134,807	\$94,245	+43
Government Payments Received			
All Farms	\$8 billion	\$7 billion	+22
Average Per Farm	\$9,523	\$9,251	+3
Farm-Related Income			
All Farms	\$10 billion	\$6 billion	+79
Average Per Farm	\$15,133	\$9,421	+61
Production Expenses			
All Farms	\$241 billion	\$173 billion	+39
Average Per Farm	\$109,359	\$81,362	+34
Net Cash Income			
All Farms	\$75 billion	\$41 billion	+84
Average Per Farm	\$33,827	\$19,032	+78

Both the value of production and farm expenses associated with that production increased from 2002 to 2007. Relatively, production value increased more than expenses, resulting in an 84-percent increase in net cash income to agricultural operations. Net cash income is the amount an operation receives from sales of agricultural products, government payments, and farm-related income after expenses are subtracted.

U.S. Department
of Agriculture

National Agricultural
Statistics Service

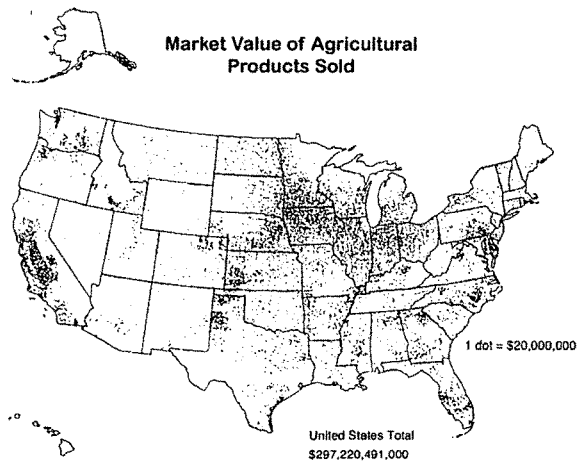


Economics

Geography of Production

The value of agricultural production is concentrated in a few regions: the Midwest, the Mississippi Delta, California and the Atlantic Coast. The top five states for the value of agricultural products sold and their percentage of the total value are: California (11.4 percent), Texas (7.1 percent), Iowa (6.9 percent), Nebraska (5.2 percent) and Kansas (4.8 percent).

Fresno County in California is the largest single county in terms of agricultural products sold in 2007, with \$3.7 billion, or 1.2 percent of the total U.S. value.



Fifty percent of the total value of agricultural products comes from nine states:

1. California
2. Texas
3. Iowa
4. Nebraska
5. Kansas
6. Illinois
7. Minnesota
8. North Carolina
9. Wisconsin

Mr. HOHENSTEIN. Yes. Thank you for the question.

And that number in my testimony was an attempt to provide some sense of the scale at which activities——

Senator INHOFE. OK. We are going to run out of time.

Mr. HOHENSTEIN. With regard to analysis, USDA is in the process of evaluating the implications of higher energy prices on the agricultural sector due to H.R. 2454.

Senator INHOFE. OK.

Mr. HOHENSTEIN. We are also looking at the implications of offsets as well.

Senator INHOFE. OK. Very good.

Mr. Stallman, I talked to some of the Oklahoma Farm Bureau people this last week, and they are very emotional about this whole thing. You heard what Senator Bond said, he was using the 2,000-acre farm. We don't have that many 2,000-acre farms, but I am sure you can scale it down a little bit. Do you agree with his figures in Missouri, and that was taken from the Ag Policy Research Institute, of up to \$30,000 per farm?

Mr. STALLMAN. That report just came out. We see no reason to dispute that. Obviously, they used probably slightly different assumptions than we did in calculating our aggregate net loss numbers for agriculture, but those seem very reasonable in terms of what you could expect at the producer level.

Senator INHOFE. I went over and met with the Farmers Coop regional group on Friday. They were meeting over in Arkansas. And one of the things that concerns him the most is, we haven't talked about the specifics, but how intensive it is in terms of agriculture in fuel, electricity, fertilizer, chemicals. In corn, it is 71 percent of the operating costs are fuel, electricity or fertilizer; soybeans, 50 percent; wheat, 72 percent; barley, 69 percent.

I assume that we have communicated this to your membership. They recognize the magnitude of this thing.

Mr. STALLMAN. Oh, absolutely. And that is what generates the basic concern we have about the whole bill with respect to what it does to energy costs because, on average across the country, 20 percent of our input costs have some relationship to energy, and we are concerned. Even though we are a strong renewable energy supplier in this country, which is positive, we still have to deal with the impacts of any future increase in energy costs.

Senator INHOFE. Yes. Well, let me ask you this question. The Chairman talked about the National Wheat Growers Association, and I don't understand how they could be supporting this when all of the large wheat States, or many of them, are on the other side of this issue, the North Dakota Wheat Commission, the Oklahoma Wheat Growers Association, the Texas Wheat Producers Association.

I wonder why they don't get together with their national association. Any ideas?

Mr. STALLMAN. Well, I hesitate to speak for other groups, Senator. I know the National Association's position. I also know the concern that has been expressed to me personally by our members who are large wheat growers. So I do not know where the disconnect lies. I do know that from an economic perspective, we can

show no analysis that indicates that even with the liberal offsets policy, that the income from that would offset the increased cost.

Senator INHOFE. I see. And has it ever occurred to you to ask the question, what are we doing here, after last week when the Director of the EPA in response to my question as to what effect would it have if we unilaterally here in the United States have a cap-and-trade, pass the bill such as we used as an example the Markey-Waxman bill. What effect would that have on the overall worldwide reduction in CO₂, and her response was it wouldn't have.

Now, if that is the case, and I agree with her, I don't agree with everything that she says; I certainly agree with that. And if we have statements such as we do have from the leaders in China and India and other countries saying under no circumstances are they going to accept any kind of mandatory reduction, what are we doing here?

Mr. STALLMAN. Well, that is a question we also raised. When we were over on the House side working on the bill and the legislative process, the rationale that was given, well, the U.S. has to show leadership by passing national legislation before we go into the Copenhagen talks. Well, I have been involved in international trade negotiations. Leadership usually means that the U.S. is supposed to give up something in favor of other countries. But there is no reason to have to have a bill passed by this Congress to go over to negotiate. You can do that without having legislation passed, as most countries are doing.

Senator INHOFE. Yes, there are a lot of people who believe the concept, and we heard this of course from Senator Alexander. I don't agree with him in this case, but that anthropogenic gases cause global warming. But there are a lot of them who actually believe that and still think that this is a disaster. And I am using the words of James Hansen, Dr. Hansen, he is Mr. Greenhouse Gas, I guess you could call him. He said, "The fact that the climate course set by Waxman-Markey is a disaster course. Their bill is an astoundingly inefficient way to get a tiny reduction of emissions. It is less than worthless because it would delay by at least a decade starting on a path that is fundamentally sound from the standpoint of both economics and climate preservation." Now, here is the guy who is on the other side, the leader on the other side, and he was here I guess it was yesterday, in Washington.

So I don't know. You look at these things, and I look at them from an Oklahoma perspective and wonder if it is not going to make any change and if the countries are, in spite of what they say about leadership, if the leaders are saying under no circumstances are we going to do it, period. Anyway.

Thank you, Madam Chairman.

Senator BOXER. Thank you.

I am going to ask Senator Udall if he would like to make a 3-minute statement and ask a question to the panel.

**OPENING STATEMENT OF HON. TOM UDALL,
U.S. SENATOR FROM THE STATE OF NEW MEXICO**

Senator UDALL. Thank you, thank you very much, Madam Chair. And I will give just a brief opening statement.

Farmers and ranchers and foresters face, I think, dire threats from global warming. For example, in my State of New Mexico, one of our agricultural centers in seven of our counties have been struck with persistent drought. And we know that part of the overlay there has to do with global warming.

Our New Mexico delegation has written a letter to the USDA on a disaster declaration for these counties, and I am afraid that this disaster could turn into a catastrophe while we wait for that response.

The U.S. Climate Impact Report also found that drought frequency and severity are projected to increase in the future over much of the United States, particularly under higher emissions scenarios. Increased drought will be occurring at a time when crop water requirements will be increasing due to rising temperatures.

As we debate the impacts of a cap-and-trade on agriculture and forestry, do not forget why we are having this debate. We must protect American farms, ranches and forests from global warming before the time runs out.

Now, Mr. Hohenstein, will you urge the USDA to respond quickly and effectively to New Mexico's drought disaster declaration request?

Mr. HOHENSTEIN. Yes, I certainly will take that back to the department.

Senator UDALL. Thank you. Thank you.

Your testimony finds that the opportunities from climate legislation will likely outweigh the costs for agriculture and forestry. Your testimony did not directly address costs to farms and forests from climate change itself, however. You did serve on the USDA's or were the USDA's representative for the recent multi-agency U.S. Climate Change Impacts Report, and that report found just what I talked about earlier.

Could you comment on that report and where you see things headed? Should farmers and ranchers also consider the avoided costs from warming that the legislation is designed to prevent, in concert with a global agreement?

Mr. HOHENSTEIN. Sure. No, thank you for the opportunity to talk about that report.

That report was coordinated by our office and produced last May, and looked at the effects of climate change on agriculture, land and water resources, and biodiversity. The effects of climate change on agriculture can be profound, but they are complex. They involve the effects of longer growing season and enhanced CO₂ fertilization, combined with the effects of higher temperature and water stress. The effects are not uniform across the United States and are regional. In fact, some areas, in particular the intermountain region, will be affected by water stress and water availability.

Areas in the south will increasingly be affected by higher temperatures that can affect grain set and pollination. So the effects are complex, and they are going to be felt increasingly throughout the United States over the next century.

Senator UDALL. And specifically when you talk about the west, most of the models talk about temperatures being twice as high as other parts of the country. And so, you are well aware, I think, being a part of the USDA, that if you have much higher tempera-

tures, you impact snowpack, which has the ability and capacity to grow the groundwater and recharge the groundwater. If that disappears, you realign the whole water situation.

So it is something that is very worrisome to a lot of us, and we hope that your department will be out front in terms of speaking of what the consequences are going to be. We know there are going to be winners and losers in certain cases, but the losers are the ones that I am really worried about, and the intermountain west I think is one of those regions where it is going to be pretty severe.

Thank you, Madam Chair. Thank you very much. Sorry for running over.

Senator BOXER. I totally understand. No problem.

Senator ALEXANDER.

Senator ALEXANDER. Thanks, Madam Chair, for holding the hearing and for bringing such talented witnesses.

Mr. Krupp, we have had testimony before this committee by scientists that a low carbon fuel standard is a more efficient way to reduce carbon in fuel than an economy-wide cap-and-trade. Do you agree with that?

Mr. KRUPP. Senator Alexander, I am glad that you have asked because it is absolutely essential that we figure out ways to—

Senator ALEXANDER. Well, I mean, I don't have a lot of time. Is it true or not true?

Mr. KRUPP. No, I don't believe that is true.

Senator ALEXANDER. You disagree with that?

Mr. KRUPP. Yes.

Senator ALEXANDER. Now, the testimony was that—how much do you think the economy-wide cap-and-trade will raise the price of a gallon of gasoline, the Waxman-Markey bill?

Mr. KRUPP. About 2 cents a year.

Senator ALEXANDER. 2 cents a year?

Mr. KRUPP. Yes.

Senator ALEXANDER. You think that will change behavior in terms of lowering the amount that people will drive their cars?

Mr. KRUPP. I think the carbon cap will. You see, Senator Alexander—

Senator ALEXANDER. No, no. Just a moment. It is economy-wide, how much of the carbon in this country comes from fuel, what percent?

Mr. KRUPP. It is roughly about a third.

Senator ALEXANDER. It is about a third. And you have said that the Waxman-Markey bill would only add 2 cents per gallon of gas. So do you think anybody is going to change their driving habits based on that?

Mr. KRUPP. Senator Alexander, you had it wrong in your opening statement because—

Senator ALEXANDER. No. I am asking you the questions. Do you think anyone will change their driving habits based on a 2 cent increase in the gallon of gasoline?

Mr. KRUPP. I think they will buy more fuel-efficient cars.

Senator ALEXANDER. On a 2 cent increase?

Mr. KRUPP. Carbon content of fuel will be lower.

Senator ALEXANDER. A 2 cent increase? You are one of the most experienced environmental persons in the city, and you're actually

telling me that a 2 cent increase in a gallon of gasoline will change driving habits.

Mr. KRUPP. It is 2 cents per year, Senator.

Senator ALEXANDER. Well, how about per gallon?

Mr. KRUPP. Well, 2 cents per gallon per year.

Senator ALEXANDER. So that will change driving? You are saying that if it goes from \$2.25 to \$2.27 that I am going to change my driving habits, or you are?

Mr. KRUPP. We should talk about it the way a cap-and-trade system works, Senator, because the cap is a mandatory system that will reduce the amount of carbon that can go into the atmosphere. So either it will reduce driving or people will get more fuel-efficient automobiles, or industries producing gasoline will have the option of paying your farmers in Tennessee to sequester carbon. I don't care whether it happens from reduced driving. I care that the carbon goes down.

Senator ALEXANDER. Well, then, if you care if the carbon goes down, you must—

[Applause.]

Senator ALEXANDER. Are we at a pep rally or a hearing, Madam Chair?

Senator BOXER. Well, just a minute. Please, can you just halt for a minute and freeze the clock?

In this committee and in all the committees, we really do not have expressions of support or opposition. I understand that there is a lot of feelings on both sides, but I am asking everyone to please withhold, and if you don't, then we have to escort you out of the room, and I don't want to start with that, because I am glad you are here.

So let's continue and show respect to our Senator and all of our panelists.

Go ahead, Senator.

Senator ALEXANDER. Thanks, Madam Chair. I appreciate that very much.

Mr. Krupp, you understand that I believe climate change is a problem, that I have introduced legislation to cap carbon from coal plants; that I authored a low carbon fuel standard here. And I think we ought to do something about it.

But I think the idea that you would apply an economy-wide fuel standard to try to reduce fuel from gasoline simply doesn't work. All it would do is raise the price of gasoline to farmers such as those we are talking about but not do the job of lowering carbon.

Why wouldn't we instead build 100 new nuclear power plants over the next 20 years? Nuclear produces 70 percent of our carbon-free electricity today. Double our number of electric cars and trucks. Explore offshore for natural gas, which is low carbon. And double energy research and development to make renewable energies cost-effective.

By my calculations, that would get us to within the Kyoto Protocol limits by 2030 with a low cost, instead of a high cost. And why are we deliberately raising the cost of energy when energy is so important to keeping jobs here, to growing food, and to helping poor people heat and cool themselves?

Mr. KRUPP. Senator, first of all, I appreciate your leadership on this issue and the bills that you have sponsored in the past, including the 4P issue. And I appreciate your desire to have a low-cost solution. As you yourself recognize, 2 cents a gallon is a pretty low cost, and that is the beauty of the cap-and-trade system. It delivers the goods that you and I want, reducing carbon from fuel use as well as the rest of the economy, at a low cost. It opens up the option——

Senator ALEXANDER. But do you support building 100 nuclear power plants in the next 20 years?

Mr. KRUPP. Actually, when you were out of the room, I predicted that is what will happen under the Waxman-Markey bill if you pass it.

Senator ALEXANDER. So you do support it? Well, why would it be necessary to raise the price of energy if we could build nuclear power plants, electrify the cars, and do R&D for renewable energy? Why do we also have to increase our costs?

Mr. KRUPP. Senator, I would love to partner with you to figure out how to make sure that this legislation keeps prices at an absolute minimum while doing the job. I would welcome that challenge.

Senator ALEXANDER. Thank you very much, Madam Chair.

Senator BOXER. Yes, Senator, when you were gone, I talked about your plan, and we called the EPA and they have said that under Waxman you would have 261 nuclear power plants by 2050. These are 1,000 megawatts. And the difference between your plan and this on the surface is you have stated that rate payers would pay the full cost of those, which means they are going to have to pay higher electricity bills.

So I don't understand how you can—and I would like to ask you this question—you don't seem to mind them paying higher bills to build nuclear plants, but you, without any tax credit, which we have in the Waxman-Markey bill. We would have tax credits. You have no tax credits to help folks. You would make them carry the whole burden, which is \$700 billion, and then keep saying it is cheap energy. I am confused on that point.

Senator ALEXANDER. Thank you.

Senator BOXER. Could you respond?

Senator ALEXANDER. I would be delighted.

Senator BOXER. Yes, yes.

Senator ALEXANDER. Thank you. I would be delighted to do that. Let me use an example, if I may. California has no nuclear, very little nuclear power.

Senator BOXER. Oh, no. We do have some. Oh, yes, we do.

Senator ALEXANDER. But I read a report just this past week that your renewable energy mandates, which are even higher than those in the Waxman-Markey bill, are concerning your State officials and they are afraid that you may even, and this is the quote, "be tight on electric power as soon as 2011" because you are not producing enough clean electricity from renewable energy.

Tennessee has among the lowest electric rates. We are about 33 percent nuclear. We are going to 40 percent. TVA is the only utility that is now opening new nuclear plants. They have just restarted Browns Ferry at a cost of \$1.8 billion, and they thought it would take 10 years to pay off the construction loan and it only took 3.

So now all of those profits from that Browns Ferry plant are going to keep rates low.

So my argument would be that over time, nuclear power paid by rate payers is cheap electricity and that renewable mandates such as requiring us in the Southeast to build huge wind turbines, defacing our landscape where the wind doesn't blow, is expensive electricity.

So that is my answer. I would compare California and Tennessee electric rates.

Senator BOXER. Well, it did not answer the question that I posed to you, so I will just leave it—

Senator ALEXANDER. No, I tried to. I mean, well, but I would like to answer your question out of respect.

Senator BOXER. I know. You did, from your perspective. You didn't from my perspective, so I want to just restate my disagreement with your answer, bringing up California into this when we are doing fine, and we are a State that does believe, as you do, that the ravages of global warming is going to affect us—

Senator ALEXANDER. But your rates are high—

Senator BOXER. I didn't interrupt you, sir.

Senator ALEXANDER. All right.

Senator BOXER. So here is the point. In your plan, you are recommending instead of doing a cap-and-trade system in a climate change bill, which as part of it allows offsets so the folks in agriculture can participate, which will give many free allowances, which will create many jobs, you are suggesting a command and control—we order you to build 100 nuclear power plants, a \$700 billion cost to the rate payers, no tax credits for them whatsoever. And you come up with other ideas, some of which I support, but costly to taxpayers.

All I am saying is it is our belief that if we do this right, we are going to have those plants built, more plants than you want, and believe me, I am not the biggest fan of nuclear energy. I believe it has to be part of the solution. You are going to have more nuclear plants built, and you are going to have tax credits going to consumers, including if I might, farmers who purchase electricity.

So I just feel the difference between us is you are coming forward with a command and control system. You are picking a winner and attacking other forms of renewable clean energy such as wind, which you have always attacked. And I am saying I think the marketplace should work through a cap-and-trade system, and the private sector putting a price on carbon will result in more nuclear power than you would plan.

The other thing I went through when you were gone is to show you, is to show everybody that the same predictions about power rates were stated in the acid rain debate. And if I can have those papers again, because I only have the second one. And it is just exactly the same rhetoric. And I will hold that until I get another turn.

Senator ALEXANDER. Madam Chairman.

Senator BOXER. Yes.

Senator ALEXANDER. May I give a short comment on what you just said?

Senator BOXER. Yes.

Senator ALEXANDER. I mean, the difference is——

Senator BOXER. Go ahead.

Senator ALEXANDER [continuing]. In 1990 and 1991 when we put a, not I, but a cap-and-trade was put on acid rain, there was a clear technological feasible way to deal with that called the scrubber. If you put on a low carbon fuel standard today, on fuel, you deal with 30 percent of carbon without this whole contraption of taxes and mandates, and you gradually lower it, and you shift people to what is probably a lower fuel cost, which is electric cars or maybe biofuels.

The problem with coal is that we haven't built a new nuclear plant in 30 years because the Government has resisted it, and we don't have a commercially viable way to recapture the carbon. All we are suggesting is Presidential leadership of the kind, the President said in his inaugural address, let's make energy from the sun, the wind and the earth. That is great. That is a lot more expensive, a lot less reliable and it is maybe 7 or 8 or 9 or 10 percent.

What are we going to use to run the country? I would like for the President to be half as interested in 100 nuclear power plants as he is in windmills, and then he could say to his Administration, please bring me a plan that will help us make sure we have at least 100 nuclear power plants.

I believe if he does that, the private sector will build them. The plants are very profitable. The Connecticut Attorney General was going to put a windfall profits on them last year during the oil crisis, and that, plus electric cars, plus energy R&D, which that we agree on, electric cars we agree on, would get us where we want to go without this big contraption that Mr. Hansen has described accurately.

Thank you for the time.

Senator BOXER. Thank you very much.

I am just going to put something in the record here and quote from it, and then we will go—then I am going to call on—I forget who's next. We go to Senator Barrasso, and then Senator Udall.

But this is important, and I am very happy that you are here, Senator, because President Obama says that the Waxman-Markey bill is a great start for us, and it will result in more nuclear power plants being built than you want. So therefore, it is very clear that he doesn't have to support your proposal. His proposal results in more nuclear power plants being built, plus the rate payers will get relief, whereas under your plan they don't.

Now, I also want to place in the record this very important fact and myth situation here. I think this is important for colleagues. There are always people who say no, no, no. And the history has them on the record. Thank God we keep a congressional record—no, no, no. We can't—we cannot do this.

And let's go back to the cap-and-trade system that was designed by our predecessors sitting in this room for sulfur dioxide. Here is the thing, rhetoric, this is one of the electric utilities: "We estimate that the acid rain provisions alone could cost electric utility rate payers \$5.5 billion annually between enactment in the year 2000 and increasing to \$7.1 billion from 2000 to 2010. Therefore, the total cost to consumers from enactment of this cap-and-trade system to 2010 could reach \$120 billion."

Well, guess what? History has proven these people wrong, wrong, wrong. This is what happened. The exact opposite happened. Instead of rising, consumer electricity rates declined by an average of 19 percent from 1990 to 2006. Adjusting for inflation, they were still 5 percent lower than when the Clean Air Act amendments were passed. And coal State residents saw rate decreases averaging 35 percent over that period.

Then it goes on. The 1990 Clean Air Act amendments will cost America's business upwards of \$50 billion. The truth is the benefits of the program exceeded the cost by 40 to 1, resulting in more than \$70 billion in human health benefits annually. That is what happens when you take pollution out of the air.

And then the other rhetoric. This is by Chemical Week: Clean Air Act amendments may cost America 4 million jobs. Reality? America created more than 20 million jobs in that period. The economy grew by 64 percent.

I have lived my adult life, I have been privileged to see that when you address environmental issues, the economy gets stronger and stronger and stronger. The basic premise there is if you can't breathe, you can't work. And if you want to know this, if you look at what is going to happen if we have unchecked global warming—by the way, I know Senator Alexander doesn't want that to happen, and I respect him so much. He is very clear on that.

But if we do nothing and we argue over this to the point of stalling everything, the fact is I would predict that the farmers in my State will be so desperate as they see more droughts, more floods, more infestations, the kinds of things that the Bush administration predicted in the work that led to this Administration's endangerment finding.

So there are so many facts out there that get obscured. But I would say this, since Senator Alexander is urging President Obama to abandon a more comprehensive approach to this and pick one winner, nuclear power, and turn his back on all the other potentials, I would urge him not to do it because it is a huge mistake. Let the free market determine—once we put a price on carbon that will be set by the free market—what makes the most sense for us.

And at the end of the day we will create the jobs. We will fight global warming. And as Thomas Friedman says, we will lead the world in all of these new technologies. It is a rare time when you have the confluence of two great challenges that we face: this recession that is deep and global, and this issue of climate change, which we need to address, and to find a solution that really lifts this economy up and makes sure that our grandkids don't have to face the ravages of global warming.

It is an exceptional opportunity here that I hope we will get over our fear-mongering and go back to history, take a look at what was said by the naysayers.

And you have another one today that the press has asked me to respond to, and that is Sarah Palin wrote this naysaying op-ed piece on why we shouldn't move forward with Waxman-Markey, which I am going to be rebutting later.

So I would just tell the American people to take a look at history. Every single time we have moved forward to go after pollution, the

naysayers have been wrong about their predictions, wrong about their gloom and doom, and we have in fact led the world.

This is our turn, and I know it is not easy to step forward and work for change, but I hope, colleagues, that we can do it. I won't get everything I want. Senator Udall is not going to get everything that he wants. He will get some things that he likes. We are not going to get everything, because I could write a bill that would get far fewer votes than I need to be able to produce. I am going to have to walk away from some things that I believe should be in the bill, and so will Senator Udall. We all have to do that.

And at the end of the day, we will have taken a step forward. And we will reap the benefits of that step.

So now, for another side of the coin, Senator Barrasso.

Senator BARRASSO. Thank you very much, Madam Chairman.

Mr. Stallman, if I could—in your testimony you said that any climate change legislation will also impose additional costs on all sectors of the economy, will result in higher fuel, higher fertilizer, higher energy costs to farmers and ranchers across the country. And you also quote EPA Administrator Lisa Jackson saying that U.S. action alone will not impact CO₂ levels.

What are farmers and ranchers across the country supposed to think of this logic? I mean, if passing a bill doesn't solve climate change yet dramatically increases their cost of doing business, does the ag community think Washington is out of touch with what is happening? When I go back home and talk to ranchers, talk to farmers in Wyoming, they are very concerned.

What are you hearing from the farmers and ranchers across the country?

Mr. STALLMAN. Well, I am hearing that concern specifically about the Waxman-Markey bill, about the potential for costs without any return. Do a cost benefit analysis, the costs are clearly there, with mandated restrictions on the use of carbon in a carbon economy, and the benefits, nothing will happen with regard to climate change. Administrator Jackson has indicated that.

We actually do have a solution in our policy, and it is a voluntary cap-and-trade. It is a true market solution. It is not a market where Government mandates restrictions and then lets the marketplace work. A voluntary cap-and-trade would allow companies to do what they would with carbon reductions, and then the consumers and our citizens would pay with their dollars. If that is what they desire to have happen, our consumers and citizens would pay with their dollars to support those companies who reduce carbon emissions.

That would be an indication of the will of the people, and it would also be a true market solution, and our policy supports that.

Senator BARRASSO. Senator Udall mentioned the concept of the winners and losers in the ag community in the Rocky Mountain West and then people across the country under this Waxman-Markey bill. I mean, I worry about western ranchers whose operations are heavily dependent on the use of Federal lands for livestock, as well as very limited opportunity for offsets, as you talk about.

These ranchers are constrained in the types of grazing practices they can employ on Federal lands. The Federal lands themselves don't qualify for offset opportunities. The majority of the West is

Federal land. I can't see how the agriculture community in the intermountain west States could possibly survive under this bill, given your testimony today.

Are these the intended consequences or the unintended consequences, do you think, of this bill in terms of the impact on our ranchers and Federal land?

Mr. STALLMAN. Well, I don't believe anyone set out to have those consequences, so they are unintended consequences, but they are very real. And the few agricultural organizations that support the Waxman-Markey bill, they gloss over the fact that the benefits of the agricultural offsets program included in there is varied across the country. And your example of what happens to ranchers who are on Federal lands, they have no opportunities for real offsets, and yet they have to eat up the additional or absorb the additional energy costs that will be created.

And so that is what we are facing. We are facing with only a few instances of agricultural producers being able to participate in offsets, which according to our analysis will not offset their increased energy costs anyway. It just makes it better than it would have been. But then some producers, as those you have indicated, fruit and vegetable producers and others, aren't going to have any real opportunity to participate in the offset markets, and that makes it even worse for them.

Senator BARRASSO. Do you think this bill can be perfected to the point where energy and input costs would be beneficial to farmers and ranchers? Or do you think that there is no way to do that?

Mr. STALLMAN. Under the current structure and what it portends for cost increases in the energy sector, I think it will be very difficult. I think we will continue to work to find provisions, and working with Senator Harkin over here on the Senate side to improve the bill on behalf of agriculture. And there are things that can be done overall, as I talked about earlier, about having more specific ways of plugging that energy hole.

The number of nuclear reactors that are proposed, that will occur under the Waxman-Markey bill are basically on the assumption that carbon costs get high enough to cause those to be cost-effective and that they will be built. We could maybe have a different model where we support a different regulatory structure for siting and approving nuclear reactors that would perhaps make the process quicker so we could plug that energy gap.

So there are some things that can be done that are missing, we think, in the Waxman-Markey bill. We still have to worry about this international competitiveness issue for farmers and ranchers. Those ranchers that you are talking about are competing in the international marketplace, and if their costs are higher and those costs are solely imposed in the United States, and our competitors overseas don't have those same restrictions because those governments refuse to accept mandates, which many have said that they will, then that just puts us in an international competitiveness nightmare in us being able to sell our products overseas. So that is another clear concern that we hope we can address in the Senate version.

Senator BARRASSO. Thank you, Mr. Stallman.

Thank you, Madam Chairman.

Senator BOXER. Thank you. And I hope you know we will look forward to working with you on those issues.

Senator Udall.

Senator UDALL. Thank you, Madam Chair.

When we talk about this issue and the discussion has been that you are putting a price on carbon, you are increasing the cost on fuel. We forget where we were last summer when we have \$4 gasoline. And I was out, Madam Chair, and I am sure you were, in the agricultural community and the farming community, and people were telling us they were going to go broke; that they were really hurting in terms of the cost of oil and the impact on them.

And the only reason economists tell us we aren't at \$4 gasoline right now is we have a worldwide recession, which we haven't seen since World War II, and we have a deep recession here in the United States.

And so to somehow assume that we are just going to sit here and that the cost of gasoline today is going to stay stable for the next 10 or 15 years is I think an absolute fantasy. So we should be focusing on how we get out of that box. And the reason we are in the box is because we are overly dependent on foreign oil to the tune of we are headed toward 70 percent dependence on foreign oil. And the oil that is left in the world we are talking about over two-thirds of it, over 66 percent, is in six Middle Eastern countries, Russia and Iran, and we have 3 percent.

So we are in a very, very difficult situation in terms of how we move forward with developing our oil resources. And many of us are for developing our oil resources, but we only have 3 percent.

So the vision, I believe, and Mr. Krupp, I would like you to comment on this, the vision I think most of us have is that through putting a price on carbon, we move ourselves in a new direction with our over-dependence on foreign oil. We try to do something about that. We move ourselves in a direction of a renewable economy.

And by the way, when we talk about a low carbon fuel standard, we actually have a low carbon fuel standard in place. We put it in place in 2005 and 2007 in the energy legislation. It is called a renewable fuels standard, which we are expanding on and improving upon. So let's not pretend we don't have a low carbon fuel standard in place and that we are trying to generate those kinds of renewable fuels.

But Mr. Krupp, I wish you could comment a little bit on where this contrast of dependence on foreign oil, we are headed down this road of becoming more dependent, and where you see putting a price on carbon taking us, and what opportunities it opens up for us in some job potential and all of those kinds of things. Please.

Mr. KRUPP. Thank you, Senator.

I think the biggest new economy, the biggest new source of jobs in the world is going to be these alternative energy sources and cleaning up our fuels and cleaning up our energy sources. I see if we do nothing a future where a bunch of tyrants who don't like us have their foot on our throat. And I don't know how we get the foot off of our throat unless we act.

And this bill, according to MIT and others who have modeled it, would reduce our dependency of oil by billions, tens of billions of

dollars every year. So I do think that the choice is between allowing us to continue to be whipsawed by the whims of some of these Mideast nations, or by doing something to diversify our sources of energy and fuel.

And the beauty of the bill is it opens up a market for a lot of different things. Some farmers will be able to participate with bio-energy, others with methane. Some will be able to put wind turbines on, not everyone will be. I agree with what you have said, Bob. Others will be able to put solar panels on their land. There will be a variety of ways that farmers and landowners can participate.

We cannot go with business as usual, America is losing jobs. We are dependent on foreign countries for the bulk of our oil supply, many of whom are very hostile to our interests. Taking action like the ACES legislation provides, allows us to get off that dependency and an explosion of new wealth for America.

Senator, those who oppose this legislation may find in a few years that they regret it very much because instead of importing oil at that point, we may be importing solar panels and wind turbines because we failed today to take that step.

I am not willing to sit by and watch us fail. We have to do something different.

Senator UDALL. Thank you very much. And we, I know that the Chairman feels this very strongly, we are trying to move on a clean energy economy, trying to capture, as you said, the industrial potential of the future.

Thank you very much, and thank you, Madam Chair.

Senator BOXER. Thank you, Senator, very much.

And I thought, Mr. Krupp, your comments were beautifully put because at the end of the day, no farmer that I know wants to be dependent on oil from people who don't like us and who are using the proceeds to hurt us. No farmer wants that. No farmer that I know wants to sit back and allow climate change to ravage this country, this Nation.

And I am going to ask Senator Udall if you could once again share with us what you told us, that if we do nothing and the climate changes the way the vast majority of peer-reviewed scientists tell us, what happens to your State, the big picture.

Senator UDALL. Well, the thing that happens in New Mexico, and this is something that all of us can look at the models. And I have been told about the models for New Mexico. And basically, imagine that you all know how we move a mouse around on a screen and grab something and slide it. Well, basically what I have been told is that if you look at the intermountain west model and looking at double the temperatures of everywhere else in the country, you are going to have a dramatic impact. And the impact would be the equivalent of taking New Mexico and dragging it 300 miles to the south. I don't know how many of you have been 300 miles south of New Mexico, but you are in the middle of Chihuahua, Mexico. OK?

The mountains that they have down there are not forested. We have fantastic forested mountains, up to 10,000 feet. We have ski areas. The snowpack that is on top of those mountains recharges the water. Just for example in the city of Santa Fe, 40 percent of

our water comes from our snowpack. So you would be changing that whole equation, changing the water situation in New Mexico.

Second what you would do is be drying out those forests. The forests might well by mid-century just disappear and you would have flora that would obviously adapt, but the forests would be gone. You would have increasing forest fires in that period because of what is happening.

So the impacts are going to be dramatic. It was brought up about being worried about farmers and ranchers. Well, the ranchers, what the U.S. Climate Impact Report found that Federal grazing land will be less productive because it is going to be hotter. So there will be less forage for the cattle, so the ranchers are going to be hurting.

These are the kinds of things that I think we are trying to prevent. And I think we need to look at where we are headed in the future, and it is not a pretty future for the intermountain west, and the way I would just describe it is more forest fires, less water, more thirst, and a real change or wiping out of a way of life.

Senator BOXER. Well, I wanted to end on that note because we have a responsibility to protect our kids and our grandkids, not just ourselves. We have lived through the years that we weren't affected by what was on the horizon. And now it is our job to ensure that future generations can live in a hospitable environment.

And every time we have done this as a Senate, it has been a winner. I have gone through that. Every landmark environmental law was attacked harshly, predictions made that it would be just the end of the world. And this is certainly no exception.

And I would like to close by saying the American Farmland Trust really gets it. In their letter of support, they say, "Keep in mind the potential cost of not supporting climate change legislation. Climate change is a real environmental challenge affecting our global ability to produce food and fiber in the years ahead."

So we need to look at that, and factor in the costs of doing nothing, being naysayers; no, we can't; no, we shouldn't; no, we mustn't. And I think if we can get over that mind set of no, we will do the right thing.

I just want to say to the panel, I so appreciate each and every one of you being here, and we will work with all of you. As we take the Waxman-Markey bill and we put our stamp on it, we are going to need all of you to work with us.

Thank you.

We stand adjourned.

[Whereupon, at 11:50 a.m. the committee was adjourned.]

[Additional statements submitted for the record follow:]

STATEMENT OF HON. BENJAMIN L. CARDIN,
U.S. SENATOR FROM THE STATE OF MARYLAND

Madam Chairman, thank you for holding this hearing on how the roles of America's farm, forests and the hardworking people tied to the land cultivation are impacted by climate change yet stand to profit from the offsets that will be included in the climate and energy legislation we construct.

Agriculture both affects and is affected by climate change. Australian farmers are contending with an unprecedented—and completely unforecasted—7-year drought that has crippled the entire continent's agriculture industry. Our changing climate creates immeasurable challenges for farmers. Historical weather and climate cycles

are no longer reliable for planning crop selection, sowing and harvesting seasons, or precipitation patterns.

As I mentioned in my statement at last week's Climate Change hearing, a 2 percent increase in global temperature can create significant heat stress for plants and animals and also aids in the spread of both plant and animal diseases.¹ Much of Maryland's agricultural growers and poultry producers are located on Maryland's Eastern Shore, and rising sea levels and increased salt water infiltration into groundwater sources are serious concerns of mine for the future prosperity of Maryland's farmers.

The measures we are considering may present new challenges for farmers and foresters. However, a system of carbon offset credits will provide agricultural growers a new commodity to effectively sell, in addition to their products, in the marketplace and would create new revenue streams for the agricultural industry.

However, in order to achieve actual reductions in greenhouse gases from agriculture, farmers must reduce:

- methane,
- nitrous oxide, and
- their overall greenhouse gas production.

Congress's climate and energy legislation must help them do so. Beyond offering offsets for the carbon sequestration of agricultural and forestry biomass, climate change legislation should also help farmers by:

- incentivizing the conversion of unproductive cropland back to its natural state,
- providing for research and development into feed and digesters to reduce and capture livestock methane,
- accounting for the carbon sequestration of agricultural biomass, and
- increasing the water efficiency of irrigation systems.

These are ways we can help our farmers and help solve the climate crisis at the same time.

It is important for farmers to understand what they stand to gain from this legislation. Agriculture Secretary Tom Vilsack is engaging in field visits to rural communities across the country to share information about the challenges and opportunities a carbon constrained economy present for farmers and ranchers. I think it is unfortunate that so much negative—and often misleading—information is conjuring fears among America's agricultural sector, and it is imperative that more outreach needs to be done to explain the impacts of climate change on growers, the need for action, and the key role agriculture plays in fixing the problem.

With EPA's scientific expertise we can develop an agricultural offsets program that is verifiable, effective and robust. With USDA's on-the-farm expertise, we can create a carbon offset program that is tailored to individual farms. With farmers at the center, we can build an effective domestic offset program that combats global warming, generates significant revenue for our farmers, and keeps our key resource lands in production for America and the world.

I look forward to working with my colleagues to make a strong climate bill that benefits farmers, and I look forward to our witnesses' testimony.

STATEMENT OF HON. DAVID VITTER,
U.S. SENATOR FROM THE STATE OF LOUISIANA

Thank you, Chairman Boxer and Ranking Member Inhofe, for holding this hearing to discuss what I believe is a very important issue.

This is a significant moment in history, as the societies that choose to expand and improve their use of energy will advance beyond those that don't. The primary objective of any country's energy policy should be to promote abundant supplies of affordable energy and to ensure that it is distributed to consumers. For examples of that philosophy look no further than China and India, where the two nations are attempting to bring great numbers of their populations out of poverty and into competition in a global economy. Cap-and-trade is the opposite of that effort.

While proponents have argued that the United States needs to lead other nations to adopt their own cap on carbon emissions, three of the world's top five emitting sources have categorically stated their intent to reject meaningful emissions limits. China, the world's No. 1 emitter, stated that "it is not possible for China to accept a binding or compulsory target." Russia, the No. 4 emitter, has called the emissions target "unacceptable, and probably unattainable." India, the No. 5 emitter, has said, "India will not accept any emission-reduction target—period."

¹Professor Alan Buckwell, director of the Land and Business Association of the United Kingdom.

There are not many in the agriculture industry that trust cap-and-trade legislation will make their industry more competitive or that Government is likely to get this right. Perhaps the Missouri Farm Bureau said it best when they stated:

“‘Skeptical’ and ‘apprehensive’ may understate our members’ feelings toward proposed legislation and regulations to reduce man’s supposed impact on the Earth’s climate. Whether it is called global warming or global climate change, we have serious reservations about lawmakers and regulatory officials imposing sweeping new regulatory requirements and costs on the U.S. economy while it is business as usual in China, India, and other countries emitting large quantities of greenhouse gases (GHGs).”

There exists a great misunderstanding in a good portion of our society about what exactly energy is and means to people and our economy, but the ones that are paying attention to cap-and-trade are starting to get it. Some people believe that advances in efficiency will limit the need for future energy sources. Others believe that increasing the cost of energy won’t have an adverse effect on middle income families or the working poor. And still some believe that forcing heavily subsidized non-competitive energy into an energy portfolio will have a net positive impact on small businesses, manufacturers and farmers. In fact, these beliefs are quite wrong.

As a society advances and technologies improve we know that energy begets the need for more energy. We now produce energy in many forms much more efficient than the carbohydrate energy farms once required to power the oxen that pulled farm implements. As that efficiency has increased so has our need for energy. Energy consumption per unit of GDP has been falling for thousands of years. We have consistently become more efficient. However, energy consumption as a whole has been steadily increasing—along with our quality of life.

Our ability to grow and advance as a society is wholly dependent on affordable energy. Low cost energy has proven to be the greatest equalizer in the history of mankind. Thanks to affordable energy the poor can stay cool in Louisiana’s hot summers, and the elderly can stay warm in Wisconsin’s cold winters. And thanks to energy’s role in agriculture we are able to feed more people than at any time in the history of the world. That will only improve with more abundant and affordable energy.

For the agriculture industry, implements once pulled by horses and oxen are now pulled by massive Caterpillars and John Deere tractors. These machines are much more efficient than oxen, but they require more energy. There exists a quite recognizable correlation between rising employment and rising consumption of conventional fuels. In the ag industry conventional fuels provide the energy that processes material and powers the increasingly advanced machines that provide internationally competitive farm products.

When the debate over efficiency was lost in the quest for affordable and reliable energy, proponents of reducing energy consumption realized that the only way to actually reduce consumption is by driving up the cost of energy. This cannot be done without reducing the standard of living on America’s middle class and low income earners. To achieve this goal you need something bigger and scarier than simply a desire to reduce our use of energy.

From Energy Secretary Chu to the environmental groups that support a unilateral reduction in carbon emissions, a consistent effort has gone to convincing proponents that the only way to decrease fossil fuel consumption is to increase the cost of energy. The effort has been made by filing one lawsuit after another to prevent domestic production and has included challenging onshore and offshore production in Alaska, convincing the Administration to cancel or slow offshore leasing programs in the Gulf of Mexico, and making every effort to increase taxes on domestic production. Yet cap-and-trade remains the best option for rapidly increasing the cost of energy and thus reducing energy consumption.

The agriculture industry is quite right to be skeptical of the Waxman-Markey legislation or any other legislation capping carbon emissions. As they say, the devil is in the details. Unfortunately, this devil has the potential to devastate our economy, reduce the standard of living for most or all Americans, and could make us more reliant on not only foreign energy, but also foreign agriculture.

As this committee works on legislation once touted by Enron and now by former Vice President Al Gore as an opportunity for “global governance,” I look forward to working through and discussing the many challenges ahead. Thank you.

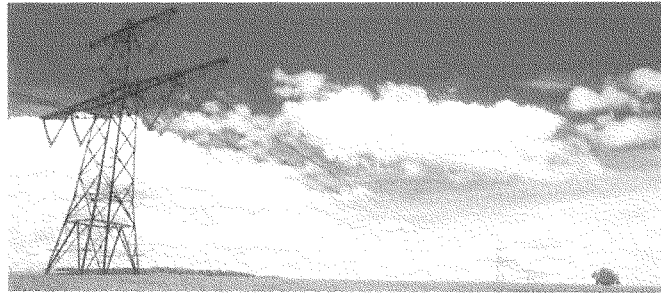
[Additional material submitted for the record follows:

Center for American Progress


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Fool Me Twice, Shame on Me

Learning from History on Electricity Rate Data



SOURCE: iStockphoto

Power lines cut across a wheat field on a sunny day.

By Daniel J. Weiss, Nick Kong | April 15, 2008

Recent studies by the National Association of Manufacturers, the Chamber of Commerce, and the National Mining Association are predicting a rate increase for electricity if the Lieberman-Warner Climate Security Act (S. 2101) becomes law. These studies—just like others we have seen in the past on acid rain legislation and other bills that address pressing environmental issues—are meant to spark fear in the hearts of legislators and paralyze them with worries about an angry public blaming them for skyrocketing electricity prices and other ills.

These types of predictions have been proven wrong time and time again. Public officials should ignore the rerun of these scare tactics.

During the Clean Air Act debate 20 years ago, electric utilities commissioned many authoritative studies to demonstrate the huge cost of reducing acid rain pollutants from their coal-fired power plants. On September 7, 1989, Southern Company President Edward I. Addison testified before the House Subcommittee on Energy and Power about such a study commissioned by the Edison Electric Institute. Mr. Addison told the subcommittee:

"We estimate that the acid rain provisions alone of H.R. 3030 could cost electric utility ratepayers \$5.5 billion annually between enactment and the year 2000, increasing to \$7.1 billion per year from 2000-2010. These estimates were developed in an analysis conducted by Temple, Barker & Sloane."^[1]

Mr. Addison warned that rate-payers in states with many coal-fired power plants would face particularly high increases. Consumers in 10 states—Alabama, Georgia, Illinois, Indiana, Kentucky, Missouri, Ohio, Pennsylvania, Tennessee, and West Virginia—would face utility rate hikes of 5.5 percent to 13.1 percent by 2009. Mr. Addison concluded that these calculations "underestimate the rate shock that would actually occur."^[2]

Mr. Addison darkly predicted that President George H.W. Bush's national program to slash the power plant pollution that caused acid rain would devastate the utility industry. "A law that sets unrealistic compliance dates will increase the cost, risk the reliability of electric service, disrupt the long-range planning of utilities, frustrate the regulatory process, and foreclose the use of clean coal technologies."^[iii] To increase the credibility of his alarms, the economic evaluation by Temple Barker and Sloane included prediction of individual state electricity rate increases.

The rate increase predictions by Mr. Addison, the Southern Company, Edison Electric Institute, and Temple Barker and Sloane were unquestionably, undeniably, unambiguously, unarguably wrong. Despite EEI and Southern Company's opposition, the acid rain program was included in the Clean Air Act of 1990. Since then, national electricity rates have actually *declined* by an average of 19 percent from 1990 to 2006 (2006 dollars). At the same time, sulfur and nitrogen oxide emissions from coal power plants were *reduced* by 46 percent and 49 percent, respectively. The EPA determined that the "estimated public health benefits from ARP [Acid Rain Program] emission reductions exceed program costs by a margin of more than 40 to 1." And a third round of reductions not included in the Act was required when the Bush administration issued the Clean Air Interstate Rule in 2005.

Of the 10 states Mr. Addison specifically identified that would suffer some of the highest rate hikes, the average electricity price in 2006 dollars was 35 percent *lower* in 2006. Missouri's electricity rate fell nearly 59 percent, almost a 71 percent difference than what the Edison Electric Institute predicted. Their Illinois and West Virginia predictions had similar outcomes, with a difference of nearly 68.5 percent and 55 percent respectively.

EDISON ELECTRIC INSTITUTE'S 1989 PREDICTIONS OF ELECTRICITY PRICES UNDER ACID RAIN PROGRAM WERE TOTALLY WRONG					
STATE	1989 EEP PREDICTED ELECTRICITY % INCREASE BY 2009	1990 ACTUAL ELECTRICITY PRICE PER KWH	1990 PRICE PER KWH BY 2009	1990 ELECTRICITY PRICE PER KWH	ACTUAL % PRICE CHANGE FROM 1990-2006 (2006)
Alabama	5.5%	5.6	8.5	7.1	-21.6%
Arizona	0.4%	7.8	12	8.2	-45.6%
Arkansas	0%	6.7	10.3	7.0	-47.4%
California	0.2%	8.8	13.6	12.8	-6.1%
Colorado	0.3%	5.9	9.1	7.6	-19.6%
Connecticut	0.3%	9.2	14.1	14.8	4.9%
DC	2.4%	5.9	9.2	11.1	17.0%
Delaware	3.3%	6.5	10	10.1	1.3%
Florida	2.7%	7.0	10.9	10.5	-4.3%
Georgia	6.2%	6.6	10.1	7.6	-32.4%
Idaho	0.7%	3.8	5.9	4.9	-19.9%
Illinois	4.5%	7.5	11.6	7.1	-64.1%
Indiana	12.2%	5.4	8.3	6.5	-28.5%
Iowa	2.7%	5.9	9.2	7.0	-31.2%
Kansas	0.9%	6.5	10.1	6.9	-46.6%
Kentucky	7.3%	4.5	6.9	5.4	-27.1%
Louisiana	2.4%	6.0	9.3	8.3	-12.0%
Maine	0.2%	7.7	11.8	11.8	0%
Maryland	4.8%	6.3	9.7	10.0	2.5%
Massachusetts	0.7%	8.9	13.7	15.5	11.3%
Michigan	2.3%	7.1	11	8.1	-35.1%
Minnesota	2.7%	5.3	8.2	7.0	-17.5%
Mississippi	5.7%	6.1	9.4	8.3	-12.8%
Missouri	13.1%	6.5	10	6.3	-58.7%
Montana	0.9%	4.0	6.1	6.9	11.7%
Nebraska	0.2%	5.6	8.6	6.1	-41.7%
Nevada	0.3%	5.4	8.3	9.6	13.8%
New Hampshire	4.6%	9.1	14	13.8	-1.2%
New Jersey	3.5%	9.1	14	11.9	-17.8%
New Mexico	0.5%	7.1	11	7.4	-49.3%
New York	1.3%	9.4	14.5	15.3	5.0%
North Carolina	3.4%	6.4	9.8	7.5	-30.1%
North Dakota	3.3%	5.8	8.9	6.2	-43.3%
Ohio	10.9%	5.9	9.1	7.7	-18.0%
Oklahoma	0.1%	5.5	8.5	7.3	-16.4%
Oregon	0%	4.2	6.5	6.5	0.5%
Pennsylvania	5.6%	7.7	11.8	8.7	-35.9%
Rhode Island	0.8%	9.2	14.1	14.8	-0.9%
South Carolina	4.2%	5.6	8.6	7.0	-23.2%
South Dakota	5.4%	6.1	9.5	6.7	-41.8%
Tennessee	0.6%	5.3	8.2	7.0	-17.6%
Texas	0.4%	5.8	8.9	10.3	13.9%
Utah	0.4%	5.5	8.4	6.0	-40.2%
Vermont	0.1%	8.3	12.8	11.4	-12.6%
Virginia	4.7%	6.0	9.3	6.9	-35.6%
Washington	2.1%	3.4	5.2	6.1	15.3%
West Virginia	10.1%	4.7	7.3	5.0	-44.8%
Wisconsin	3.2%	5.4	8.3	8.1	-2.1%
Wyoming	1.7%	4.2	6.5	5.3	-23.3%

How could the Edison Electric Institute so badly miscalculate their predictions? Because the study failed to account for the innovation and savings that occur once managers and engineers have binding reduction targets with firm deadlines. In other

words, Temple, Barker and Sloane's study could not predict or account for future ingenuity.

What became of the people who made such errant predictions? One of Temple, Barker and Sloane's senior partners became a Vice President for Charles River Associates. Edison Electric Institute commissioned Charles River Associates to do a study on the Lieberman-Warner bill. It was so flawed that a number of major EEI utilities forced President Tom Kuhn to redo it with "revisions."

The National Mining Association also commissioned Charles Rivers Associates for its just released analysis of the Lieberman-Warner Climate Security Act. Not surprisingly, this CRA study predicts a huge loss of Gross Domestic Product due to the Lieberman-Warner bill. The Environmental Protection Agency analysis found the opposite. It estimated only a "0.04 Percentage Points" reduction in "average annual growth" of Gross Domestic Product from 2010-2050 under Lieberman-Warner.

Twenty years on, the companies and trade associations responsible for global warming pollution are commissioning economic evaluations of the Lieberman-Warner Climate Security Act like a desperate Hollywood mogul commissions screenplays. These studies, too, will be unable to account for the economic benefits and cost reductions caused by innovation.

Like the Edison Electric Institute acid rain study, these analyses will include authoritative-looking charts, graphs, and tables. They may even include projected electricity rate increases by state. And like the EEI acid rain and electricity price analysis, this extra layer of detail is an attempt to increase the studies' veneer of credibility. All of these studies will conclude that reducing the health and environmental threat posed by global warming will be ridiculously expensive and most harm middle- and low-income Americans. The purpose of these studies is not to help public officials make better policy choices. These studies are designed to paralyze legislators with fear of action.

Hopefully, senators and their staff will ignore these credible-sounding, but fatally flawed and inaccurate studies. Instead, they should focus on the costs of inaction on global warming—more smog, more asthma attacks, more ferocious storms, more drought, more wildfires. We are already suffering from many of these consequences, and if unchecked, they will prove more costly than pollution reductions.

Legislators should ignore industries' doomsday studies and should seize the opportunity to begin the transition from a high-carbon, high-fossil fuel economy to a low-carbon, energy-efficient economy that spurs new technologies, new industries, and new jobs. An enhanced version of the Lieberman-Warner Climate Security Act could jump start this process.

[i] United States, Cong. House of Representatives. Subcommittee on Energy and Power, Hearing on HR 144, HR 1470, HR 2568, HR 2909, HR 3030 and HR 3511, 101st Cong., 1st sess. Washington: GPO, 1990, p. 574. An electronic version of the hearing is currently unavailable.

[ii] Ibid, p. 562.

[iii] Ibid, p. 562.

Chart source: Edward L. Addison, President and CEO of Southern Company, on behalf of Edison Electric Institute on Clean Air Act Reauthorization September 7, 1989 House Subcommittee on Energy and Power EIA-Electric Power Annual, http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html

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