



# Statement of the American Farm Bureau Federation

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**To: The House Committee On Agriculture**

**Regarding: Climate Change**

**Presented By:  
Bob Stallman  
President**

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My name is Bob Stallman. I am President of the American Farm Bureau Federation and a rice and cattle producer from Columbus, Texas. I appreciate the invitation to speak to the committee this afternoon. Farm Bureau is the nation's largest general farm organization, representing producers in every commodity, in every state of the nation as well as Puerto Rico, with over 6 million member families. The predictions of catastrophic changes in the earth's climate and what we need to do to forestall that change have generated tremendous debate within Farm Bureau. I am pleased to be able to share our thoughts with the committee today and to recommend some specific actions the committee should take.

At the outset, I would like to commend Chairman Collin Peterson (D-Minn.) for holding this hearing. Agriculture will incur higher fuel, fertilizer and energy costs as a result of this legislation. In addition, agriculture and forestry have a very important and unique role with regard to the development and implementation of any climate change and energy policy. Neither of these factors has been considered in the current bill, and we believe that the only way these issues will be addressed is through action by this committee.

According to the latest Environmental Protection Agency (EPA) *"Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005"* updated in 2008, agriculture and forestry emit between 6 and 7 percent of the total greenhouse gases (GHG) emitted in the United States. The same EPA document also indicates that agriculture and forestry have the potential to sequester between 15 and 20 percent of total U.S. emissions. The U.S. Department of Agriculture (USDA) says that currently these two sectors sequester about 11 percent of total emissions, so that 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. The Waxman-Markey bill does not.

Any climate change legislation will 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. Over 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.

Unfortunately, H.R. 2454 fails to recognize the role that agriculture and forestry can play in climate change policy and also fails to mitigate the economic impacts to agriculture resulting

from the bill. We identify below areas where the bill is deficient, and how this committee might address those deficiencies.

1. Legislation should ensure that farmers and ranchers are not put at a competitive disadvantage in international trade.

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, such as China and India, 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 maybe 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 any legislation should ensure that our producers are not put at a competitive disadvantage.

The bill provides assurances against adverse impacts from international markets for other sectors of the economy. For example, Title IV of the bill provides assistance for energy intensive manufacturing sectors (such as steel, cement and others) that rely on international trade. Similarly, agriculture is an energy intensive industry that relies on international markets as well. Food is a basic, universal commodity whose availability and price have significant impacts on the world. Measures to level the playing field for international markets should take into consideration agriculture's concerns.

In addition, any such assurances must be in accordance with World Trade Organization (WTO) principles with respect to trade remedies. Both the transition assistance measures and border adjustment remedies set forth in H.R. 2454 raise concerns about whether they would be in compliance with the WTO.

2. Any cap and trade legislation must contain a robust offset title that fully recognizes the important role that agriculture can play in carbon reduction schemes.

Title III of the bill would establish a "cap-and-trade" program as the method for implementing carbon reductions. Under this program, certain sectors of the economy would be subject to GHG emission "caps" that would decline annually. Capped entities having difficulty meeting their "cap" obligations would be able to "trade" with other capped entities that have met their cap obligations and have excess emission allowances to "trade."

Another method for meeting “cap” obligations is for capped entities to contract with uncapped sectors to engage in GHG reduction or sequestration projects to “offset” the GHG emissions that cannot be reduced to their capped obligations. These “offset credits” are valuable to capped entities so long as they are cheaper than purchasing additional emission allowances or retrofitting facilities to meet cap obligations.

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.

H.R. 2454 is totally deficient in this regard.

- a) The bill should specifically include the full range of agricultural GHG reduction or sequestration projects as eligible offsets. While the bill currently authorizes the use of offsets, it does not provide that agricultural or forestry offsets will be eligible. Rather, it leaves the selection of eligible offset types to the discretion of EPA. There are no assurances that farmers and ranchers will be allowed to provide offsets or play any role in mitigating GHG emissions under the bill. Agriculture and forestry have the potential to sequester about three times the amount of GHG that they emit, but without a defined role in this bill that potential will be unrealized. EPA analysis of H.R. 2454 shows no role for agricultural soil sequestration practices, casting serious doubt as to whether that type of offset would ever be permitted by EPA.

Failure to set forth an initial list of eligible offset types also has other detrimental implications as well. Without a list of eligible offset types, investors will be reluctant to finance carbon reduction or sequestration projects.

We suggest that a good starting point for such an initial list of eligible offset types is the list in the Committee on Energy and Commerce Report accompanying section 733 of the bill. That language is attached.

- b) Any legislation must give the USDA the primary role in administering agricultural offsets and other carbon reduction or sequestration projects. USDA has both the institutional resources and technical expertise necessary to effectively administer any carbon offset allowance program. USDA has developed methods for measuring carbon in different types of soils, and has done significant work in developing methodologies and protocols for different agricultural, forestry and livestock practices relating to carbon reduction and sequestration. USDA also 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.

The bill currently makes no provision at all for USDA. Instead, the bill leaves administration of the offsets title entirely to EPA, including total discretion as to what types of offsets will be eligible. A recent article in the Des Moines Register underscores why this is a concern. In 2005, EPA estimated that farm practices and forestry programs could reduce carbon emissions by about 700 million metric tons annually. Retaining crop residue in the soil would account for about 25 percent of that reduction. Under that scenario, credits were estimated to be worth about \$15 a ton. EPA, after looking closer at the House Bill now believes that the carbon credits from agriculture and forestry likely won't exceed 300 million tons until after 2040. And then, most, if not all, of the offsets would come from planting and preserving forests, not through agriculture. Again, due largely to U.S. agriculture's success in this area, the EPA sees very little need for the scope of credits to farmers that would be needed to offset higher operating expenses. We need policy to quantify and reward the vast amount of action and investment our farmers have already made to retain carbon in our fields and USDA should have that responsibility.

The role for USDA must be spelled out in legislation. Recent statements from Secretary of Agriculture Tom Vilsack indicate that USDA will not assert its jurisdiction or authority over agricultural offsets but will instead leave offset administration to EPA. Unless this committee inserts a provision giving USDA a role over agricultural offsets, jurisdiction will stay with EPA.

The Energy and Commerce Committee Report language recognizes the need for USDA involvement in the offset process, stating: "The Committee strongly encourages the Administrator to consult closely with the Secretary of Agriculture on all elements of the offsets program related to agricultural and forestry practices." That recognition is important, but it is not sufficient. The USDA role must be spelled out in the bill.

- c) Any legislation must allow early adoptors to participate in an offsets program. One of the fundamental flaws of the current offsets title is that it does not allow "early adoptors" to be eligible to participate in the offset program. Many producers have already adopted management practices that reduce or sequester

carbon. These producers are generally leaders in the industry who have adopted these practices to improve environmental conditions. Instead of being recognized for their early actions, the bill penalizes them by making them ineligible to provide any offset credits. Innovators should not be penalized simply because they saw the merits of taking these actions before legislation was enacted. By limiting participation only to those who undertake reduction or sequestration after legislation is enacted, the bill creates a perverse incentive to encourage farmers and ranchers to wait until legislation is enacted before adopting carbon reduction or sequestration practices. For those who have adopted such practices and therefore might be ineligible to provide offset credits, the bill creates the perverse incentive of encouraging such producers to cease these practices for a certain period of time and resume them only when they become eligible to provide offsets.

An amendment by Rep. Zack Space (D-Ohio) during the markup in the Energy and Commerce Committee partially addresses the issue by allowing participation by producers who began practices after 2001. Their participation, however, is contingent on approval by EPA for such prior practices. We suggest removal of the language granting EPA the discretion to set a participation date.

We should make it clear that allowing participation by early adoptors does not provide payment for past reductions or sequestrations, but only for future reductions or sequestrations. For example, some scientific studies indicate that soils generally become saturated with carbon after 20 to 30 years. Farmers that have been no-tilling for 20 years, therefore, likely have little or no additional opportunities to sequester carbon from that practice. Farmers who have engaged in the practice for 5 or 10 years likely have opportunities to sequester additional carbon. Allowing their participation to sell offsets would be based on their future sequestration only.

Without allowing these producers to participate in selling future reductions or sequestrations, there is nothing to prevent these producers from releasing the carbon they have stored or stopping the reduction practices they have adopted. Allowing them to participate retains the benefits they have already attained and provides that they will continue such practices.

### 3. Offsets do not shield producers from adverse impacts of this legislation.

Even with a robust agricultural offsets title as indicated above, the bill will not make economic sense for farmers and ranchers. There are several reasons for this.

- a) A number of agricultural sectors will not benefit from offsets. 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. As a general farm organization, AFBF represents all commodities. Most fruit and vegetable

producers will not qualify for offsets. Western ranchers whose operations are heavily dependent on the use of federal lands for livestock forage also have very limited offset opportunities. Many areas of the West in general that are coal-dependent are also the areas that have limited offset opportunities. Not all areas of the country are able to productively adopt conservation tillage practices, thus restricting their offset possibilities. Yet, these producers will incur the same increased fuel, fertilizer and energy costs as their counterparts.

- b) Revenue from offsets will only defray a portion of the increased input costs resulting from this bill. The bill was amended to defer auction of emission allowances for a significant portion of the total allocation, a factor that will reduce 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. This does not even account for the adverse effects on competition or offset transaction costs that will result from this bill.

Additionally, H.R. 2454 should be modified to incorporate the provisions of H.R. 2409.

We commend Chairman Peterson, Ranking Member Frank Lucas (R-Okla.), and all members of the committee who have introduced H.R. 2409. AFBF strongly supports this bill and believes it must be incorporated in any climate change legislation that is considered by Congress.

AFBF has long been a proponent of renewable fuels and the Renewable Fuel Standard (RFS). We believe biofuels are key components to increase our nation's energy security.

The RFS is an important step in recognizing that biofuels like ethanol and biodiesel are clean burning transportation fuels that lesson our dependence on foreign oil and revitalize rural America.

AFBF has strong concerns with the notice of proposed rulemaking offered by EPA. The RFS passed in the Energy Independence and Security Act of 2007 (EISA) requires new biofuels to emit from 20 to 60 percent fewer GHG emissions than gasoline to be eligible for the RFS program.

The controversy stems from EPA's inclusion of modeled, projected indirect land use impacts in its scoring of the GHG emissions from biofuel production and use. This action could penalize the ethanol and soy biodiesel industry if, in using those fuels, blenders cannot get credit toward meeting the RFS. Essentially, the EPA has determined that the production of ethanol in the United States is forcing land use changes in foreign countries to destroy their valuable rain forests to produce farm commodities to make up for reduced exports of these commodities from the United States. This is simply silly economics and not supported by fact.

Our members have serious concerns about the terms "indirect land use change" and "lifecycle carbon emissions" and how these concepts would be measured and implemented. We do not believe there is a reliable way to measure or accurately predict how the production of biofuels will affect land use change in other countries. For our farmers, the market dictates which crops

will be planted and where those crops will be grown. If there is sufficient demand for a crop, farmers will produce it. If the market persists, greater efficiency will follow.

Improved plant varieties, new technologies, and more efficient agricultural practices have produced greater crop yields of higher quality. It is unrealistic to think that anyone can predict how agriculture will evolve in the future based on the single variable of biofuels utilization. New and uncertain science to predict international land use change has no place in federal regulations.

We are also concerned that biofuels are the only transportation fuel being measured for GHG reduction. If we are going to accurately measure GHG reductions we need to measure the land use change for petroleum. This will allow us to compare GHG emissions from all transportation fuels.

H.R. 2409, The Renewable Fuel Standard Improvement Act, provides a clear way to fix this problem and clarify the way GHG's emissions are measured.

The RFS included in the Energy Independence and Security Act of 2007 also did not include all forms of forest biomass, and we believe that is unfortunate. Under the standard, the only forest biomass considered renewable is that from "actively managed tree plantations."

The reason for such a narrow definition is unclear, but the result is many family farm forest owners will be precluded from active participation. If the purpose of the standard is to increase the use of forest biomass, the definition should be as broad as possible to encourage its use.

Farm Bureau supports changing the definition of renewable biomass to include all forms of forest biomass. It is important the legislation be as inclusive as possible regarding energy feedstocks and methods. We support the definition of renewable biomass included in the Farm Bill and in H.R. 2409, The Renewable Fuel Standard Improvement Act.

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, and I would now like to touch on more general aspects of the debate, and the pending bill, with the hopes that some of these problems can be addressed before the measure reaches the House floor.

Farm Bureau has set out a number of pillars that we have shared with the committee. I would like to emphasize a few of those here today because I think they are central to how a climate change program will affect agriculture.

1. All the clamor and excitement over this issue has focused on claims of upcoming catastrophic events – rising sea levels, horrific weather disasters, furious hurricanes, melting polar ice, demise of certain species and migration of people from some territories to others. The list goes on.

But no one can tell if the bill reported from the Energy & Commerce Committee will actually fix those problems. So before we rush to impose constraints on our economy

that may or may not work, there ought to be some way of measuring whether the benefits in the bill at least roughly equal the costs. In our estimation, the legislation as it stands today falls far short of that standard.

2. Everyone acknowledges that this is a global issue. The United States cannot solve it on its own. We all support leadership by the United States, but we should not engage in the economic equivalent of unilateral disarmament. There must be some mechanism in the legislation to assure that other countries, such as China and India, also are part of the solution.
3. If in fact there is the political will finally to wean our economy off the use of fossil fuels, then let's go about the real business of coming up with an energy plan for America. That means we must "plug the hole" that will be created when we take carbon-based fuels out of our economy. The legislation must be an honest and straightforward approach. It means a real commitment to nuclear power. It means a realistic assessment of how much solar, geothermal and wind energy can contribute and under a realistic timeline. We cannot have overly optimistic assumptions of when carbon capture and sequestration (CCS) technology will come on line. The bill must be real. In the absence of "plugging the hole," we will see price spikes caused by induced energy supply shortages that will be harmful to our economy.

This last point leads me to 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 back in April;
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"<sup>1</sup> 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 CCS technology. EPA assumed this technology would be affordable and commercially

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<sup>1</sup> EPA Preliminary Analysis of Waxman-Markey Discussion Draft, 4/20/09 available at <http://www.epa.gov/climatechange/economics/economicanalyses.html#wax>, page 10

available starting in 2014, whereas most other estimates are for 2020 or 2025. None is in place today.

3. EPA in its analysis used previous assumptions by MIT<sup>2</sup> 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 notes<sup>3</sup> 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 Liberman/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 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 their Liberman/Warner proposal study. Because while the caps that 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.”<sup>4</sup> 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 it begins losing out to nuclear after 2040, when the CO<sub>2</sub>-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 on

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<sup>2</sup> *Assessment of U.S. Cap-and-Trade Proposals*, Report No. 146, April 2007

<sup>3</sup> Op. cit., page 4

<sup>4</sup> MIT study, op. cit., page 32

the order of 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 I would cite was articulated just a couple of days ago, 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 article<sup>5</sup> 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.” said the article. 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 this 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.

Given these caveats, 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 the 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.

Taking EPA’s estimates of 2020 costs, AFBF projects input costs would rise by \$5 billion versus a continuation of current CO<sub>2</sub> 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.

The reduction in corn plantings discussed above does lead to slightly higher corn prices, just as the movement into soybeans drives those prices lower. Overall cash receipts to the crops sector are expected to rise by \$500 to \$600 million. But these revenue increases for crops translate almost directly to increased feed costs for the livestock industry. As is the case for crops, the livestock sector will require some time to adjust to the new reality, but after a few years, the

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<sup>5</sup> “Carbon Capture and Storage Moves to Center Stage of cap-and-trade Debate”, *Climate Wire*, June 9, 2009

higher inputs represented by 2020 cost changes suggested by EPA will generate a similar \$500 to \$600 million increase in livestock cash receipts. But feed cost increases are expected to chew through \$400 million of that rise in cash receipts.

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 children's children 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 CO<sub>2</sub> prices estimated by EPA come in at \$22.20 per ton – expressed in 2005 dollars. For 2050, CO<sub>2</sub> 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. Feed costs also rise, but in this case by only in the \$725-\$775 million range. Another large adjustment observed under the scenario is a nearly \$4 billion decline in rent paid to non-operator landlords. Overall, farm income is estimated to run \$13 billion lower than would be the case without CO<sub>2</sub> 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 not 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 CO<sub>2</sub> prices were to rise sufficiently. Much more work is needed to understand the full effects of these potential land use adjustments.

Also remaining to be done is further work on potential income streams from offsets. But critical to this work are the rules Congress will write that will affect those income streams. Recent analysis by EPA suggests that there are no revenues to return to the sector from agricultural land use. Much of the view being 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. In other words, past good actions by the

industry are to be acknowledged with a thank you, and the sector is just being asked to accept higher input costs with aplomb.

There is also a potential revenue stream available by sales of crop residue as an input into the renewable electricity standard. Studies around 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, Mr. Chairman, 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 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.

Attachment (1)

## ENERGY AND COMMERCE COMMITTEE REPORT LANGUAGE

Section 733, Eligible Project Types: Requires the Administrator to establish a list of offset project types that are eligible under the program, taking into account the recommendations of the Offsets Integrity Advisory Board. Provides guidelines for establishing and updating the list.

In implementing this provision, the Committee expects the Administrator to fully evaluate each of the following categories of activities for potential inclusion as eligible offset project types:

(1) agricultural, grassland, and rangeland sequestration and management practices, including--

- (A) altered tillage practices;
- (B) winter cover cropping, diversified rotations and other means to increase biomass returned to soil in lieu of planting followed by fallowing;
- (C) conversion of cropland to rangeland or grassland, on the condition that the land has been in nonforest use for at least 10 years before the date of initiation of the project;
- (D) reduction of nitrogen use or increase in nitrogen use efficiency;
- (E) reduction in the frequency and duration of flooding of rice paddies;
- (F) reduction in carbon emissions from organic soils;
- (G) reduction in greenhouse gas emissions from manure and effluent; and
- (H) reduction in greenhouse gas emissions due to changes in animal management practices, including dietary modifications;

(2) changes in carbon stocks attributed to land use change and forestry activities, including--

- (A) afforestation or reforestation of acreage not forested as of January 1, 2007;
- (B) forest management resulting in an increase in forest carbon stores including but not limited to harvested wood products;
- (C) management of peatland or wetland;
- (D) conservation of grassland and forested land;
- (E) improved forest management, including accounting for carbon stored in wood products;
- (F) reduced deforestation or avoided forest conversion;
- (G) urban tree-planting and maintenance;
- (H) agroforestry; and
- (I) adaptation of plant traits or new technologies that increase sequestration by forests;

(3) manure management and disposal, including--

- (A) waste aeration; and
- (B) biogas capture and combustion; and

(4) non-agriculture and forestry project types, including--

- (A) recycling, reuse, and waste minimization;
- (B) methane collection and combustion projects at mines;
- (C) methane collection and combustion projects at landfills;
- (D) methane collection and combustion projects at natural gas systems;
- (E) projects to reduce emissions from municipal or industrial wastewater treatment systems;
- (F) projects that capture and geologically sequester uncapped greenhouse gas emissions with or without enhanced oil or methane recovery in active or depleted oil, carbon dioxide, or natural gas reservoirs; and
- (G) projects to capture and destroy or avoid emissions of greenhouse gases from industrial sources for which entities do not have compliance obligations under section 722 or other provisions of Title III.

In considering these potential project types, the Administrator must take into account recommendations of the Offsets Integrity Advisory Board.

The Committee expects the Administrator to issue an initial list of offset project types and their associated methodologies under section 734 as expeditiously as practicable, but in no case later than one year from the date of enactment. The Administrator should add additional project types, along with their associated methodologies, to the list as expeditiously as practicable, but in no case later than two years from the date of enactment. In developing baselines, measurement, and monitoring methodologies for a broad range of offset project types as quickly as possible, EPA should build on its experience in programs such as Natural Gas STAR, Climate Leaders, and the Landfill Methane Outreach Program. The Committee understands that EPA is already working with USDA and DOE on the AgSTAR program to encourage the use of methane recovery from manure digesters and is working on afforestation, reforestation, and forest management protocols under the Climate Leaders program.

The Committee strongly encourages the Administrator to consult closely with the Secretary of Agriculture on all elements of the offsets program related to agricultural and forestry practices.