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BEFORE THE SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE**

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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.