

Statement by

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

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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 American Clean Energy and 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.

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.