

## **Discussion of Opportunities and Recommendations for Carbon Offset Projects in North Carolina's Agriculture and Forestry Sectors**

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Good morning. Thank you very much for the opportunity to speak to the Global Warming Commission today. My name is Will McDow. I serve as the Southern Forest Projects Manager for Environmental Defense. Environmental Defense is a national nonprofit organization committed to finding economically viable solutions to some of our most serious environmental problems. A large part of my job entails identifying sound incentive mechanisms that will spur environmentally beneficial practices on forest and agricultural lands here in North Carolina and across the Southeast, some of which involve actions to avoid, curb or sequester greenhouse gas emissions.

My comments today will focus specifically on the enormous opportunity carbon offsets could provide the agriculture and forestry sectors in North Carolina. Carbon offset projects essentially are actions that individuals such as farmers and landowners take to avoid greenhouse gas emissions or sequester greenhouse gases. If done properly, these actions can produce high-quality, verifiable greenhouse reductions or credits that can be sold to a variety of entities in what is called a carbon market. While I cannot stress enough that carbon offset projects would be worthwhile merely for their potential to produce immediate greenhouse gas emission reductions, my comments today will focus on the tremendous economic benefits that they offer and the need for the state to help prepare landowners and farmers especially to participate in the emerging carbon offset market.

The state can help facilitate the emergence of agricultural and forestry carbon offset projects by:

- (1) Educating farmers and landowners on the emerging carbon offset market – first and foremost so that they undertake activities that produce the highest-quality, most economically competitive offsets. These will be offsets or credits that produce measurable, verifiable and accurate reductions in greenhouse gas emissions. Education will help farmers and landowners know how to seize these opportunities and with whom to partner. Finally, education will help landowners structure projects to protect their interests, financial and otherwise;
- (2) Establishing guidance on what makes a truly effective and financially viable carbon offset project. The Duke Standard serves as a very good resource for that guidance; and
- (3) Generally promoting high-quality, verifiable carbon offset projects and helping them to get underway as quickly as possible.

Before delving into these specific topics, I would like to provide you with an idea of the projects and work that we at Environmental Defense are already witnessing. I imagine that there are many other projects underway of which we are not yet aware. In addition, I would like to mention that the state's actions to spur carbon offset projects will help to

lay the foundation for some of the recommendations from the CAPAG on agricultural and forestry practices to reduce greenhouse gas emissions. Essentially, carbon offset projects serve as one of the major financial mechanisms by which these activities can be put on the ground.

## **I. Opportunities – The Interest is Here Already**

If I can leave you with one impression today, it is to tell you that our state possesses great potential to generate carbon offsets and that the interest is already strong in investing in these projects in North Carolina. First, let me describe the types of projects that are available to investors in our state. There are a large variety of projects that could qualify.

For example, offsets could be produced by:

- Capturing methane (a potent greenhouse gas) from animal waste and converting it to renewable energy or avoiding methane production in the first place;
- Implementing soil and water conservation best management practices, which include but are not limited to precision application of nitrogen fertilizer, conservation no-till, riparian buffer restoration, and conversion of marginal or highly erodible lands to forests; and
- Sequestering carbon in forest stands and soils through better management practices. This especially is a good option for providing landowners with an added revenue stream so as to withstand development pressure.

Clearly, North Carolina is fertile ground for many of these projects, and the state has caught the attention of many interested parties from within and outside the state. At Environmental Defense, we have seen a steady stream of investors over the past year that have asked our office how to undertake greenhouse gas offset projects in the state. In particular, legislation passed in the 2007 session that established a cost-share program to promote the adoption of innovative hog waste management systems and the renewable energy and energy efficiency portfolio standard have shown investors that there are already resources and a concerted drive to reduce greenhouse gas emissions in the state.

**(1) SB 1465:** The lagoon conversion cost-share program that passed as part of comprehensive swine farm legislation this year has put our state on the map as the leader in animal waste management innovation. That innovation will pave the way for carbon reductions, and investors view our state as the proving ground.

**(2) SB 3:** The Renewable Energy and Energy Efficiency Standard (REPS) has also sent a strong signal to investors that the state is serious about identifying alternatives to coal that will reduce greenhouse gas emissions into the atmosphere. Those avoided emissions could be an added source of revenue for farmers and forest land owners, and make the economics work for waste-to-energy.

Because of the focus on swine in our state and in these two specific pieces of legislation, the main thrust of early carbon offset project interest in North Carolina has been in the swine sector. Projects that involve forest management and agricultural best practices are gaining momentum as well. Emerging carbon offset opportunities include:

1. EcoSecurities – EcoSecurities is a multi-national company that develops and supplies emission reductions for both the compliance and voluntary markets. The company's interest in North Carolina stems directly from the establishment of the lagoon conversion program in the swine legislation passed in 2007. EcoSecurities is looking now to working with individual swine producers to develop lagoon cover and anaerobic digestion projects that will produce verified emission reduction credits that can be sold to a number of entities.
2. Duke Energy/Nicholas Institute/Cavanaugh Associates – Duke Energy has been working with the Nicholas Institute at Duke University and Cavanaugh Associates to develop a swine waste management project to pilot the use of hog waste for energy generation. The main economic driver of that project has been the potential returns of carbon credits. Other utilities are interested in following suit.
3. CamCo/Tudor Jones Climate Leaders Joint Venture –Tudor Jones, a multi-billion dollar investment firm, has committed more than \$100 million in a joint venture with Camco International, a company that specializes in carbon credit aggregation and project development. Camco is developing a business model focusing on North Carolina and other states that have taken steps to reduce project costs.
4. USDA/NRCS – In 2006, the USDA awarded a \$1million conservation innovation grant to enhance air quality and provide carbon credit incentives on swine farms in North Carolina and on New York dairy operations. The purpose of the program is to “expand the development and implementation of an innovative, market-based carbon credit program to cover manure lagoons, reduce methane emissions, enhance air quality, and provide additional farm income to hog farms in North Carolina and dairies in New York.” Added revenue generated from carbon credit payments is expected to range between \$160,000 and over \$250,000 per year for the participating farms combined depending on future carbon prices. In addition, through a Conservation Innovation Grant awarded to NC State University and developed by staff in the North Carolina office of Environmental Defense, a project will be estimating how the potential pool of carbon reductions available from the ten million hogs produced in this state can defray the costs of implementing innovative swine waste management systems that meet the environmental performance standards required for new and expanded farms in the state. A loose estimate of the number of CO2 equivalents from North Carolina's livestock sector is 1.7 million tons per year, most of which is attributable to swine.

These examples underscore how the state is attracting investors that have substantial capital and interest in generating carbon offsets for both the compliance and voluntary markets.

## **II. Creating High-Quality Carbon Offset Projects**

Not all carbon offset projects are created equally. The marketplace rewards high-quality projects with higher prices and lower quality with lower prices. As the new carbon market emerges, landowners are often approached by companies they do not know and offered financial returns for a "product" they do not fully understand. High-quality offset

projects achieve meaningful carbon reductions, adhere to transparent, credible standards, utilize a verifiable baseline and measurable accounting metrics. The state should promote strong standards so that market participants are all operating by the same game book. The Duke Standard<sup>1</sup> provides an excellent roadmap for how to measure and verify projects.

### **III. Recommendations**

North Carolina certainly is waking up to the opportunity of the carbon offsets market. However, the state could be moving much more quickly and strategically to fully grasp this potential. For example, staff from the U.S. Environmental Protection Agency's Region 4 Office in collaboration with the North Carolina Farm Bureau has been hosting informational meetings on carbon credit trading. Representatives from state and federal government, including officials from USDA's Natural Resources Conservation Service, our local academic institutions, and non-governmental organizations and industry associations have been meeting to ascertain how carbon credit trading works and what steps are needed to develop projects. A smaller group of forestry interests is coming together to discuss forest carbon offset projects in the Southeast.

While everyone is excited about the promise of carbon offset projects, most are waiting for a clear signal of how exactly to proceed. In order to move ahead, Environmental Defense recommends that the state move quickly to address three specific needs: (1) the education of landowners who are eligible to engage in carbon offset projects; (2) the creation of clear and uniform guidance for carbon offset projects; and (3) lowering of the transaction costs inherent in any offset project.

**1. Education of Farmers and Landowners.** There is certainly much to learn to take advantage of these new opportunities. With technical assistance and education, however, farmers and landowners can be prepared to seize the opportunity. Technical assistance and education could occur through extension service to ensure that landowners and farmers (a) understand the opportunities and what projects would qualify, and (b) are equipped with the knowledge needed to ensure that they can fairly negotiate a fair shake. This could occur specifically by increasing knowledge of farmers and landowners by directing those with whom they interact, such as the Cooperative Extension Service, the Division of Soil and Water Conservation, the Division of Forest Resources, the Rural Economic Development Center, and USDA representatives.

**2. Establishment of Guidance to Develop Clear and Uniform Standards.** Carbon offset projects must achieve real, meaningful carbon reductions – to make a difference for the environment and to be of value in the emerging carbon marketplace. Standards are needed so that investors and landowners understand exactly what they are getting and what is required of them. The monetary value of offsets depends on whether they meet high quality standards and create a verifiable net reduction of greenhouse gases in the atmosphere. Some steps the state could take include:

a. Development and Adoption of Standards – The state should develop and adopt standards for agriculture and forestry emission reductions and offsets. Clear

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<sup>1</sup> "Harnessing Farms and Forests in the Low-Carbon Economy: How to create, measure and verify greenhouse gas offsets." The Nicholas Institute for Environmental Policy Solutions. Willey, Zach and Bill Chameides. Duke University Press. 2007.

guidance from the state will assist farmers and landowners who undertake carbon offset projects to know what counts and is marketable. The Duke Standard serves as an excellent starting point. Standards could be established through North Carolina's involvement in the multi-state Climate Registry. Any standards or guidance should require the following:

- i. Offset projects must exceed business as usual and not cause greenhouse gas emissions at some other juncture (i.e., additionality and leakage);
- ii. Methods and assumptions used to calculate and verify emissions reductions must be transparent and independently verifiable. The verifying body or entity must have no financial interest in the project, and projects should be subject to ongoing quality assurance and quality control assessment (i.e., Third Party Verification);
- iii. Offsets must be maintained. Some accounting mechanism must be established to track changes in the quantity and ownership of the reductions. Moreover, the timeframe in which the emission reductions are expected to be achieved should be clearly identified. Any potential future releases should be anticipated and mitigated, possibly through replacement reserves or other insurance mechanism (i.e., permanence); and
- iv. A mechanism should be established to ensure that carbon offsets are enforceable. Reductions should be serialized and tracked on a registry to prevent individual emission reductions from being sold repeatedly. Currently, North Carolina is part of the national climate registry. While this can be achieved through the Climate Registry, the state should work to ensure that the registry lives up to these principles;

b. Clarify ownership issues. The state should act to reduce confusion by clarifying that farmers and landowners retain the rights to sell carbon credits when they sell or donate conservation easements for clean water, wildlife, farmland preservation and other purposes (e.g., CREP, CWMTF, ADFPTF). Similarly, clear guidance is needed for agricultural and forestry cost share programs that may lead to carbon sequestration or emission reductions on private property. Many of these state and federal programs have not addressed these ownership issues.

c. Net environmental benefit. The state should clearly endorse the principle that carbon offset projects should always serve as a net benefit to the environment. Every effort should be made to avoid 'unintended consequences'. All carbon offset projects should be designed to address other environmental problems so the project has a net benefit for the environment. For example, with projects that involve waste-to-energy on swine farms, Environmental Defense would like to see that revenue from carbon offsets must be used to offset the costs of full innovative systems that meet all of the environmental performance standards established for new or expanded swine farms. Certainly any projects that receive subsidies, either through cost-share funding or from utility ratepayers, should have to meet environmental performance standards. Some private investors consider this to be absolutely critical.

**3. Reduce Project Costs.** High, upfront transaction costs and delayed income limit the current financial returns of some carbon offset projects. The state could lower measurement, verification and other transaction costs by providing:

- a. **Third Party Verification and Measurement.** The state specifically could serve as a verifier and/or help to measure carbon reductions, which could be a substantial transaction cost for individual farmers and landowners. This also could include some type of mechanism to rate aggregators and project developers so that those that want to undertake projects could have a place to turn for unbiased, sound advice on how to structure offset projects and contracts;
- b. **Carbon offset economic development and recruitment.** The state Department of Commerce should develop an economic development strategy to recruit and aggressively court investors and carbon offset entities to invest in North Carolina.
- c. **Increase private investment by directing Departments of Agriculture, Commerce and DENR to work with key commodity groups,** including swine producers, dairy producers, and forest landowners and carbon aggregators to develop major projects;
- d. **Reduce the costs of environmentally superior hog waste management processes** that capture methane and address other pollution problems and attract additional private investment in improving hog waste management by increasing appropriations to the Division of Soil & Water Conservation's NC Lagoon Conversion Cost Share Program; and

#### **IV. Conclusion**

As this Commission turns its attention to specific legislative proposals, it is appropriate that it has started by discussing offsets. The state can quickly and easily facilitate economic investment and address global warming by educating farmers, establishing guidance and promoting carbon offset projects. These projects present the quickest win-win opportunities of the issues that are before you.

The state should be doing all it can to help our forestry and agricultural sectors – including large and small farmers, land holding companies, forest landowners and forestry companies – take advantage of carbon offset projects. Doing so will help some of our most economically strapped areas of the state, will make North Carolina a leader in climate solutions, and will maintain our natural heritage.