

## **Greenhouse Gas Control: Implications for Agriculture**

### **Overview**

Legislation is being considered at the federal and state levels that would control greenhouse gas emissions thought to be the cause of “global warming.” Laws mandating emission reductions are very expensive, cause slower economic growth, and would have little effect on the global climate. By increasing energy costs, such programs would reduce net income for the typical farmer by between 26 and 51 percent. An alternative to reducing emissions is to pay farmers and foresters to increase the amount of carbon stored in their soil and trees. However, farmers emit 35 times as much greenhouse gas as their soil sequesters each year, making it likely that most farmers would pay more for emission permits than they would earn by selling credits. Biological carbon sequestration programs would also cause higher energy prices and new regulations. Emissions trading is unlikely to work given the ubiquitous nature of carbon dioxide, and would be a risky endeavor for farmers and investors.

### **1. Federal and state policymakers are rushing to enact greenhouse gas control legislation to slow the onset or ameliorate the effects of global warming.**

Even though the science of “global warming” is highly uncertain, elected officials are rushing to pass laws aimed at controlling emissions of gases thought to contribute to climate change. Those gases are principally carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Greenhouse gas control laws typically call for voluntary or mandatory emissions reporting, increased use of renewable energy sources, explicit caps on utility emissions, incentives for capturing or “sequestering” carbon, and initiatives aimed at reducing car and truck emissions. According to the American Legislative Exchange Council (ALEC), 10 states have biological carbon sequestration programs in place, 13 have renewable energy portfolio mandates, and three have caps on stationary sources of greenhouse gas emissions.

At the federal level, the Bush administration’s Global Climate Change Initiative (GCCCI) combines government and private voluntary initiatives to reach a goal of reducing greenhouse gas intensity (emissions per dollar of GDP) in energy production and consumption by 18 percent over the next 10 years. Legislation is being debated by Congress that would impose mandatory emission reductions and require utilities to use renewable fuels to generate 10 percent of their electricity output by 2020.

## 2. Reducing greenhouse gas emissions, the first option, is likely to be extremely damaging to farming and related industries.

**Emission reduction programs are very expensive and slow economic growth.** Best available research suggests reducing emissions to 7 percent below 1990 levels by the year 2010 would reduce gross domestic product (GDP) by \$300 billion to \$400 billion a year and destroy 2.4 million jobs. Energy prices would rise 55 percent to 85 percent. Average annual household income would fall approximately \$3,300 (in 2001 dollars) below baseline levels.

Effect of Higher Energy Costs on Individual Farmer's Costs and Net Profit				
Commodity	Effect on Costs		Effect on Profits	
	25¢ per gallon tax	50¢ per gallon tax	25¢ per gallon tax	50¢ per gallon tax
Corn	13.9%	27.9%	-14.7%	-29.3%
Soybeans	10.9%	21.8%	-7.5%	-15.0%
Cotton	11.6%	21.9%	-23.7%	-44.7%

**State greenhouse gas control programs would be 10 times as expensive.** States that attempt to “go it alone” will find the cost of reducing greenhouse gases is far greater than what is projected for a national program. States cannot take advantage of lowest-cost opportunities outside their borders and must rely on costly command-and-control regulations. Some or all of their emission reductions will be offset by *increases* in emissions in other states as

economic activity migrates to states with lower energy costs and fewer obstacles to economic development.

**Farmers would be especially hard hit by higher energy prices.** A national program to reduce emissions to 7 percent below 1990 levels by 2010 would require higher energy prices equivalent to a tax on gasoline of approximately 50 cents per gallon. Such a tax would cause net profits for farmers to fall by between 15 and 44 percent, depending on the crop. (See the table on this page.) Total annual U.S. farm production expenses would rise more than \$23 billion, causing net national farm income to fall by 51 percent.

## 3. Biological carbon sequestration, offered as an alternative to emission reductions, would not benefit the agricultural community.

Because emission reduction costs are so high, policymakers are turning their attention to biological carbon sequestration programs. This may appear to be beneficial to farmers and ranchers, since it offers to pay them to do what many are already doing voluntarily. But carbon sequestration faces daunting problems of its own.

**Many farmers and ranchers would pay more for emission permits and other regulations than they would earn by sequestering carbon.** Total greenhouse gas emissions from agricultural activities in 2001, according to EPA, were 35 times greater than the net amount of carbon sequestered in agricultural soil that year. Organic soils are net emitters of carbon and

probably cannot be managed to store more carbon. Livestock production, including dairy farming, is a particularly large net source of greenhouse gases.

**Environmentalists will be disappointed, too.** Even if an biological carbon sequestration program in the U.S. benefitted farmers, it would have virtually no impact on the global climate. Agricultural soils in 2001, net of their emissions, sequestered less than 1 percent of total U.S. greenhouse gas emissions. Even doubling or tripling the use of no-till cultivation would offset only 2 or 3 percent of total emissions. Once soil is saturated with carbon there could be no more gains, meaning biological carbon sequestration is not a long-term solution.

**Biological carbon sequestration efforts in the U.S. could be offset by changes in land use in Third World countries.** The biggest opportunities for carbon sequestration lay in planting trees on cropland and meadows. But subsidizing tree planting would reduce U.S. farm exports and prompt more farm output in countries without artificial constraints on farming. This would lead to more deforestation in Third World countries and a net increase in carbon emissions.

**Net CO<sub>2</sub> Flux from Land-Use  
Change and Forestry in 2001**  
(Million Metric Tons of  
Carbon Dioxide Equivalents)

Forests	(759.0)
Urban Trees	( 58.7)
Agricultural Soils	( 15.2)
Landfilled Yard Trimmings	( 5.3)
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Total	(838.1)

Source: EPA, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2001*, April 2003, pp. 151-2.

#### **4. Emissions trading won't make greenhouse gas control programs more efficient or effective.**

Emissions trading has been promoted as a way to lower the cost of reducing greenhouse emissions and generate the revenue necessary to reward farmers who sequester more carbon in their soil. But emissions trading is more problematic than its advocates admit:

**Identifying the sources of carbon dioxide would pose a bigger challenge than faced by any emissions trading program now operating.** Unlike pollutants targeted by existing emissions trading programs, carbon dioxide is ubiquitous and most of it comes from natural sources. Carbon dioxide cannot be traced to a small number of sources.

**Verifying emission reductions would be difficult or even impossible.** Estimates of emission reductions vary depending on whether the unit of measurement is project-specific, facility-wide, whole life-cycle, short-term, or long-term. For example, emissions can be technically reduced by outsourcing some activities (such as electricity generation), even though total emissions associated with a unit of output are left unchanged or even increase.

**Existing programs have not been as successful as their proponents claim.** Emissions trading programs now in operation around the country are characterized by thin markets, government over-regulation that kills innovation, changing rules that leave investors high and dry, verification problems, and government meddling. Rather than demonstrate the potential benefits

of a greenhouse gas trading program, these programs should make farmers and investors wary of promoters who make promises they cannot keep.

## 5. Conclusion and advice to the agricultural community.

We conclude that proposals to control greenhouse gas emissions pose a very serious threat to agriculture in the U.S. due to the energy-intensive nature of the industry. Programs that seek to cap or reduce emissions lead to higher energy prices, which would reduce farmers' net income and profits. Proposals to pay farmers and ranchers to sequester carbon in their soil are superficially more appealing, but they are likely to lead to higher energy costs, new regulatory burdens, and emission permit costs that exceed whatever revenues might be earned.

Farmers and their allies should forcefully oppose greenhouse gas control programs at both the national and state level. Such programs are unnecessary, enormously expensive, and particularly injurious to the agricultural community.

Neither emission reductions nor sequestration is likely to reduce carbon dioxide concentrations in the atmosphere enough to have any effect on global climate. Independent researchers say the costs of greenhouse gas programs are at least 10 times greater than any potential benefit. And emissions trading – heavily promoted as the way to make greenhouse gas control programs more efficient – probably cannot work for something as ubiquitous as

carbon dioxide. The records of emission trading systems now operating show serious problems and major risks to investors.

Farmers and their allies should forcefully oppose greenhouse gas control programs at both the national and state level. Such programs are unnecessary, enormously expensive, and particularly injurious to the agricultural community. Biological carbon sequestration is not a stand-alone policy to cope with global warming, even if it is presented that way by its advocates. It is part of an expensive and intrusive government program that would profoundly and negatively affect every producer and consumer who uses energy – in other words, all of us.

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