Climate Change Policy Could Offer Silver Lining for Crop Producers

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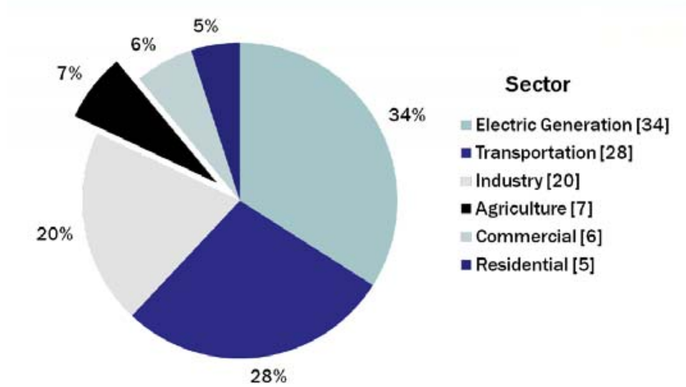
Mentioning climate change to a farmer often stirs a mix of feelings about politics, science, how those two mesh, and how our government responds with regulations that influence their way of doing business. Regardless of what you believe about this issue it is very much in the media lately— with last summer's cap & trade legislation passed by the U.S. House, dramatic news about the polar ice caps, and the United Nations Climate Change Conference in Copenhagen wrapping up just last week. Many businesses would undoubtedly suffer with proposed changes, but some farmers could reap substantial gains.

"The federal government is likely to take significant steps to regulate greenhouse gas (GHG) emissions in 2010," said Bryan Endres, University of Illinois Assistant Professor of Agricultural Law at last week's Farm Economics Summits, held across Illinois. "This has the potential to increase input costs to farmers, such as fuels, electricity, and fertilizers. But crop producers may also have significant opportunities to add to farm income via greenhouse gas offset trading under the 'cap & trade' regime."

Agriculture is an energy-intensive industry, with direct consumption of multiple carbon-based energy sources, including gasoline, diesel fuel, propane, and electricity. In addition, producing and distributing fertilizers requires huge amounts of energy. Agricultural operations account for approximately 7 percent of greenhouse gas emissions in the United States (see graphic).

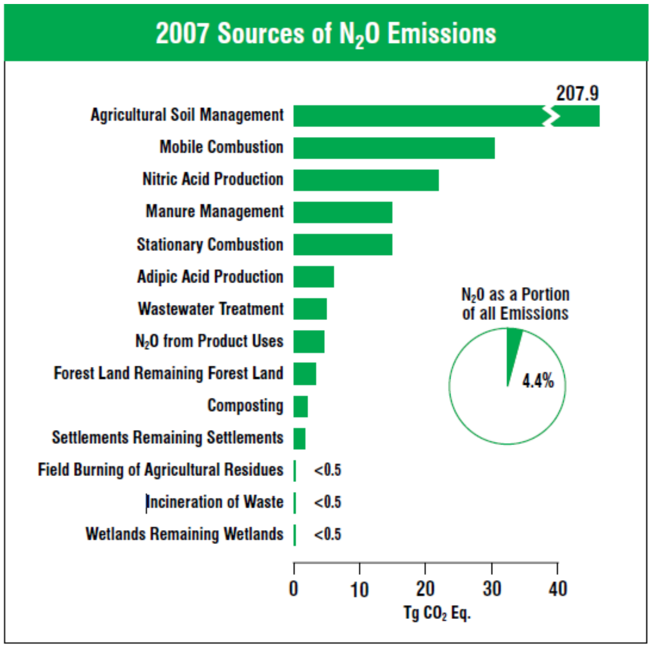


Relative contributors to U.S. greenhouse gas emissions. (EPA)

Greenhouse Gasses are not Equal While carbon dioxide (CO_2) usually garners the most attention, there are several compounds of concern, some with a much greater potential to impact global warming. One of these is methane (CH_4), a key product of livestock's natural process of enteric fermentation, and nitrous oxide (N_2O), of which crop production using commercial nitrogen fertilizers is a major contributor. Compared to carbon dioxide, methane is 21 times the contributor to global warming, nitrous oxide 310 times greater. Other atmospheric components of concern include hydrofluorocarbons (HFCs) and sulfur hexafluoride (SF6). Based on their relative global warming potentials, scientists convert greenhouse gas emissions into CO_2 equivalents.

In 2003 the Chicago Climate Exchange (CCX) created a voluntary GHG emissions cap for member companies, and up until this year about 34 million agricultural offsets had been sold, each representing a metric ton of CO_2 equivalent.

Cap & Trade In June 2009, the U.S. House of Representatives passed H.R. 2454, the American Clean Energy and Security Act, which includes a mandatory GHG emission "cap and trade" program. Caps are limits based



Commercial fertilizers used on crops are the major source of nitrous oxide, a potent contributor to global warming. (EPA)

on greenhouse gas emissions—at present requiring a 17 percent GHG reduction by 2020 and 83 percent by 2050. The "trade" part means that carbon offsets could be sold to capped entities. Title V of the bill explicitly exempts agricultural facilities from the emissions cap. Although the cap gradually will increase the costs of energy intensive agricultural inputs, a December 2009 USDA analysis concluded that agricultural offsets, combined with increases in commodity prices, would provide an annualized annuity value of $22 billion to agriculture, with 30 percent of the gains accruing to the Corn Belt.

GHG Reporting To better measure domestic greenhouse gas emissions, the government has directed EPA to develop a mandatory reporting regime for GHG's. Covered entities are to begin monitoring emissions as of January 1, 2010, with annual emissions reports commencing in 2011. This rule exempts agricultural operations with the exception of very large livestock enterprises that emit methane and nitrous oxide combined greater than 25,000 metric tons CO_2 equivalent per year. EPA estimates that 107 livestock operations nationwide meet that threshold.

To a producer such as Dewey Van Wynesberghe of Ohio, who presented at the 2007 Top Farmer Crop Workshop and has been receiving about $2 per acre of carbon credits through the National Farmers Union program, recent legislation should be a much-awaited change. It has been Van Wynesberghe's no-till practices that have allowed him to participate, as long-term no-till can sequester carbon in the soil from atmospheric CO_2 captured by crops. "We were no-tillers already, and while the payments have been relatively small, we now have an established record that should allow us to best compete for emissions trading programs."

For More Information

2009 U.S. Greenhouse Gas Inventory Report, United States Environmental Protection Agency. Available at: http://www.epa.gov/climatechange/emissions/usinventoryreport.html

A Preliminary Analysis of the Effects of HR 2454 on U.S. Agriculture. Office of the Chief Economist, Economic Research Service, United States Department of Agriculture, July 2009. Available at: http://www.usda.gov/oce/newsroom/archives/releases/2009files/HR2454.pdf

Climate Change Policy and Agriculture. Presented by Bryan Endres at the 2009 Illinois Farm Economics Summits December , 2009. Available at: http://www.farmdoc.illinois.edu/presentations/2009%20items/IFES/2009%20IFES%20-%20Endres_R.pdf