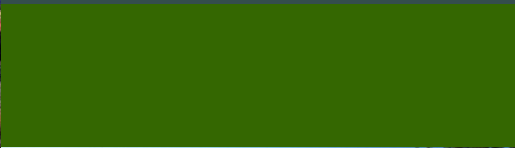




Status of Climate Change Policy Development Issues for Agriculture



William Hohenstein
Global Change
Program Office

Why should farmers and ranchers care about climate change?

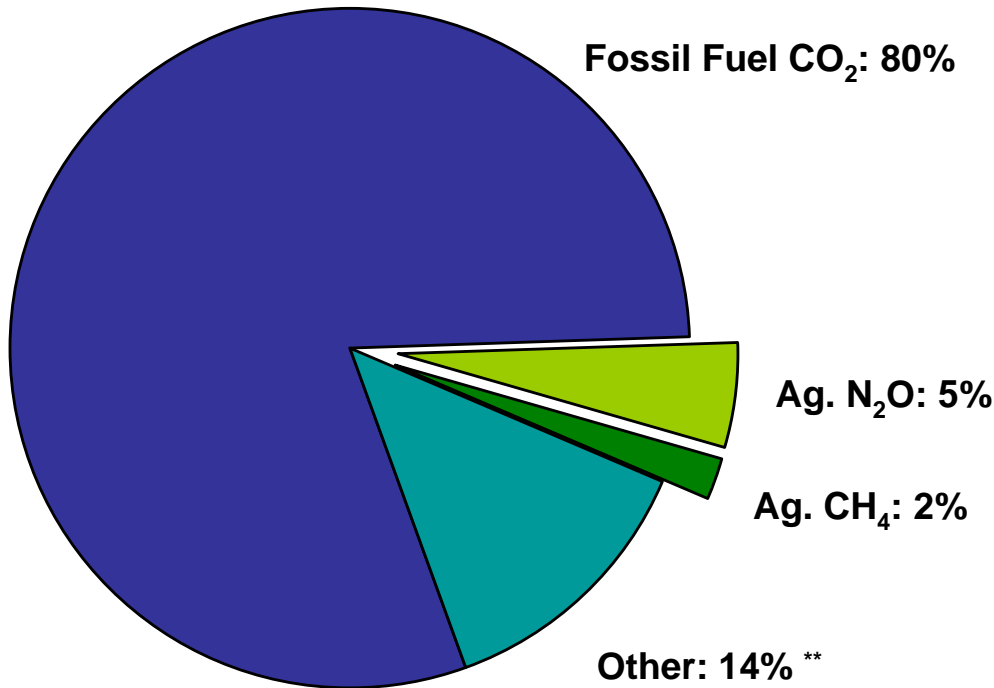
- **Climate variability, and climate change** have effects on agriculture and land use.
- Agricultural and forest systems are **important sources of greenhouse gases and carbon sinks**
- Forest and agricultural emission reductions and carbon sinks offer **potentially significant low-cost opportunities** to address climate change

Within the US:

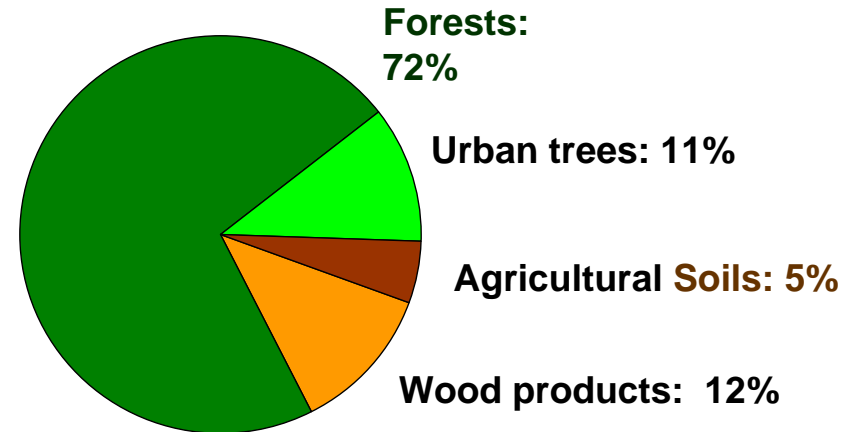
Agriculture accounts for 7 % of GHG emissions

Carbon sequestration offsets 11 % of U.S. emissions

**U.S. GHG Emissions:
7,260 million metric tons CO₂e**

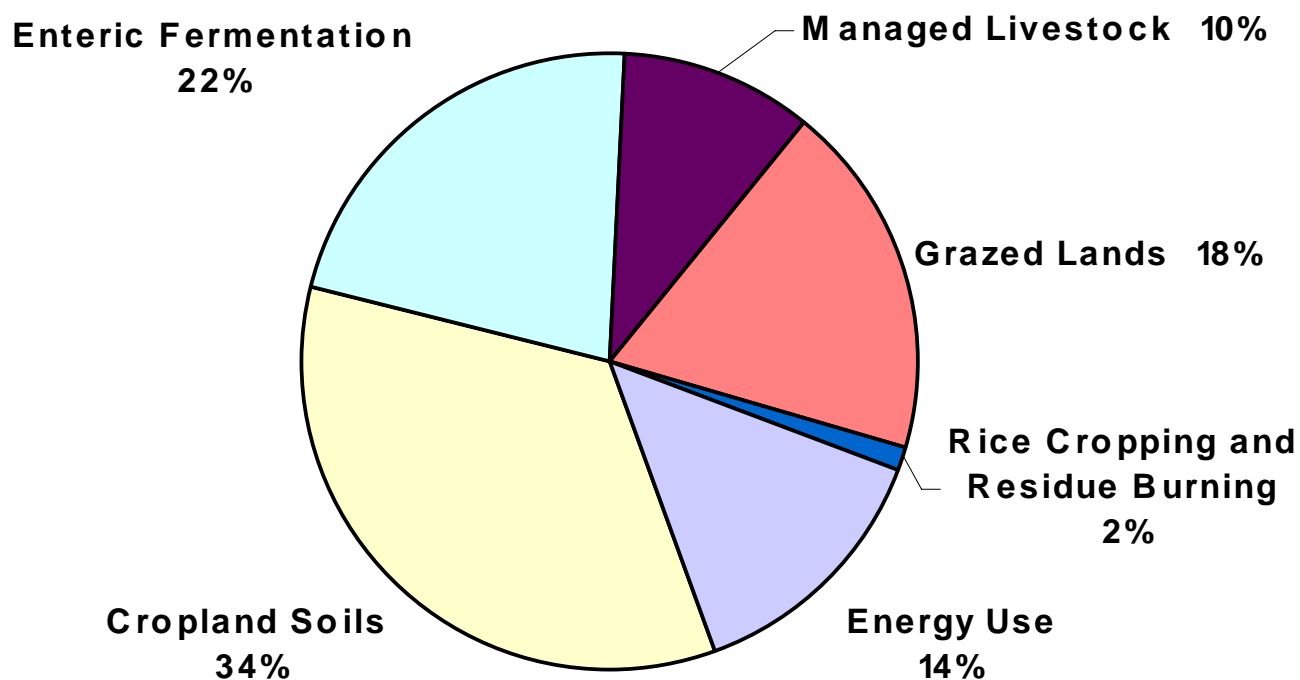


**U.S. Carbon Sequestration:
828.5 million metric tons CO₂e**



Within agriculture:

Half of emissions are from livestock and grazing,
A third are from cropland nitrogen, and
The remainder from energy use and small sources



Why is there interest in Cap-and-Trade?

Concept: Regulators set overall limits on emissions (or environmental performance). Firms must have allowances to emit the pollutant. Allowances can be bought, sold, or transferred

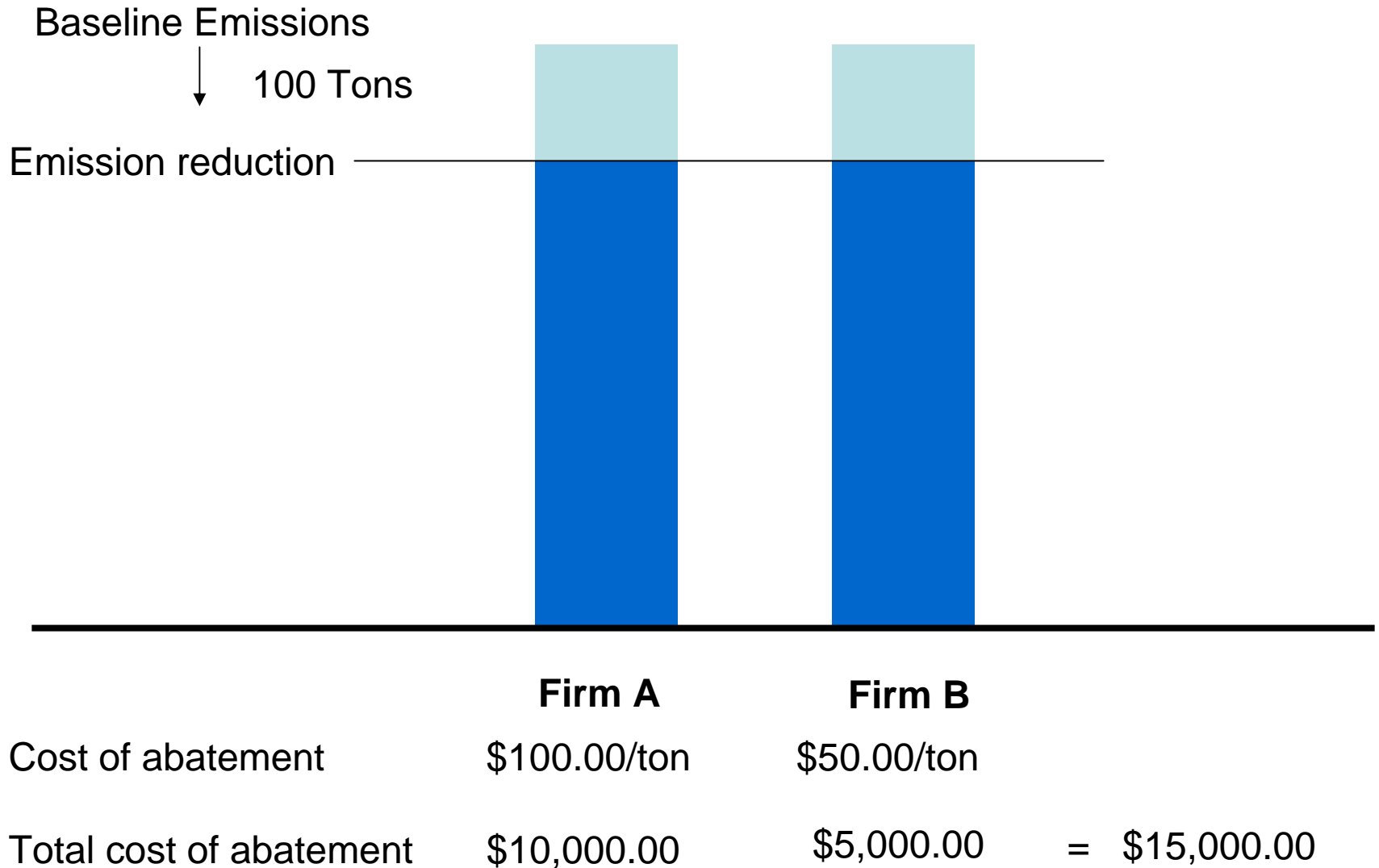
Attributes:

- Establishes clear property rights for pollutants
- Taps market forces to efficiently allocate resources to reduce pollution
- Provides incentives to innovate
- Equates costs of environmental control across all polluters

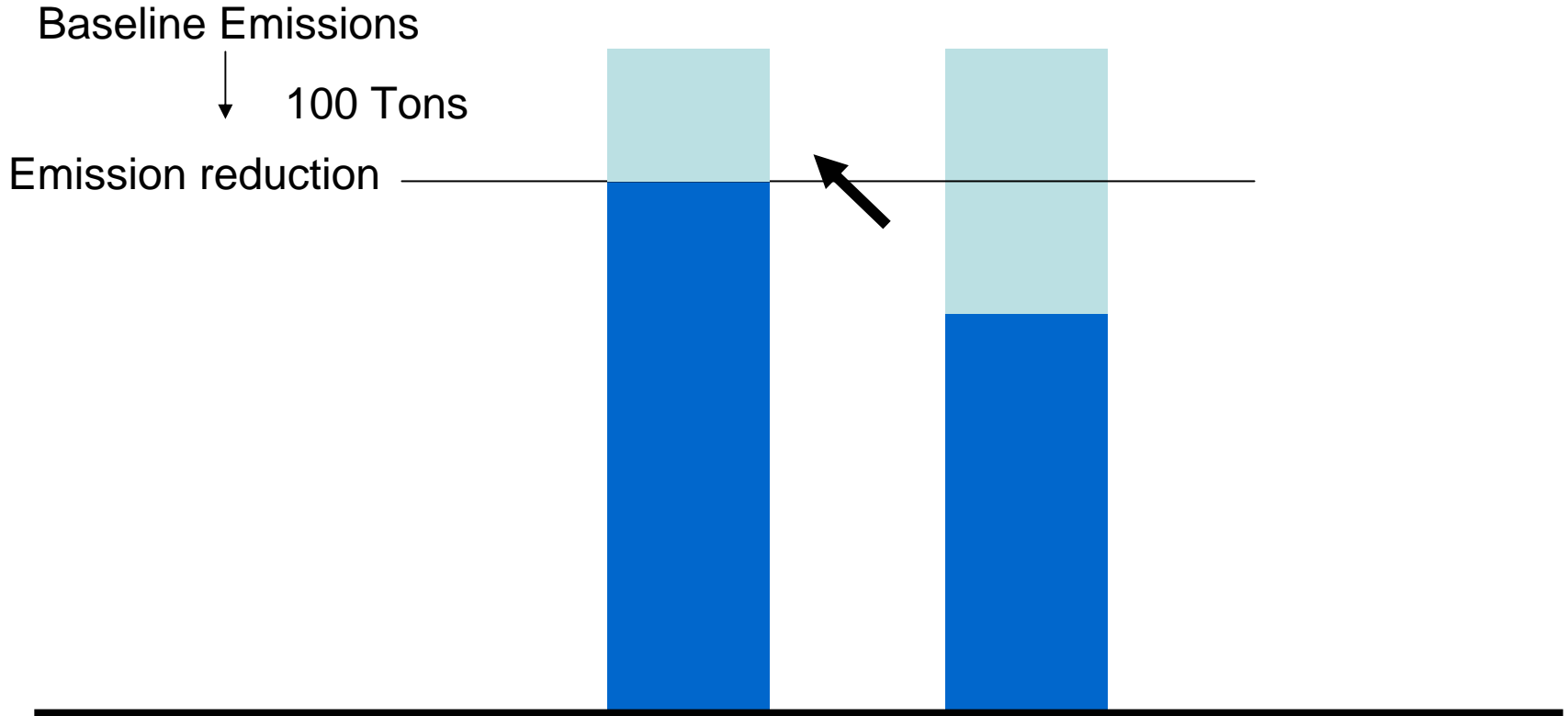
Concerns:

- Makes it difficult to address localized environmental damage
- Distribution of allowances creates new assets – and transfers of wealth

Traditional Command and Control Regulation

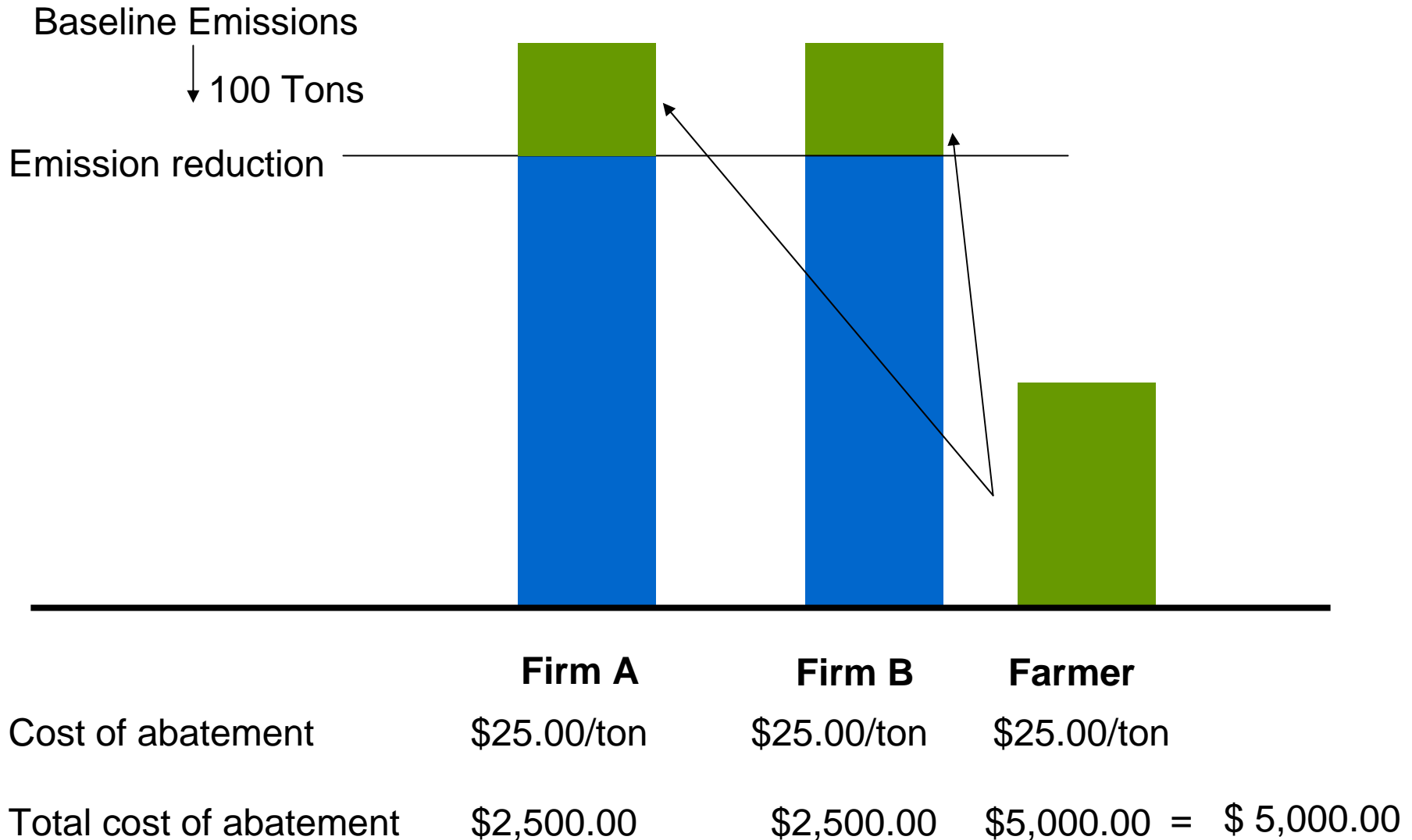


Cap and Trade Regulation



	Firm A	Firm B	
Cost of abatement	\$50.00/ton	\$50.00/ton	
Total cost of abatement	\$5,000.00	\$5,000.00	= \$10,000.00

Cap and Trade Regulation With Offsets



Issues with Offsets

Offsets are produced by entities that are not regulated:

- Would the action have happened anyway? (Additionality)
- Will other firms/entities fill gaps if the action results in a drop in production? (Leakage)
- What are we measuring benefits against? (Baselines/benchmarks)

Carbon sequestration is unique:

- Will the carbon that is sequestered and stored be kept out of the atmosphere? (Permanence)

Most agriculture and forestry sources and sinks are not well defined “point” sources:

- Can we truly assess the benefits? (Measurement uncertainties)

How does Waxman-Markey HR 2454 address Agriculture and Forests?

Greenhouse Gas Regulation

- Sets caps on greenhouse gas emissions from 85% of current sources
- Agriculture and forests exempt from the cap
- Provisions reduce impact on domestic fertilizer production through 2025

Offsets

- USDA will administer the offsets program;
- Caps the use of domestic offsets at 1 billion tons of CO₂e per year;
- Requires USDA to account for:
 - Leakage
 - Additionality
 - Uncertainties

Costs and Benefits of Climate Change Policy to Agriculture

- Three main issues:
 - Production costs : energy and inputs
 - Offsets/incentives: GHG reduction potential
 - Renewable energy: Wind, bioenergy
- Agriculture is energy intensive:
 - Fertilizer and fuel costs account for 50-60 percent of variable costs of production for corn;
 - Because of higher personal transportation expenditures, rural households are more likely than urban households to feel the pinch of increased gas prices.
- The costs will be considered against the potential benefits from offsets and renewable energy markets
- Lastly, by doing nothing, there will be a cost as well from the effects of warming.