

## **How a Domestic Greenhouse Gas Emissions Trading Market Could Work in Practice**

*A Supplement to the November 1999 Policy Report  
"Reframing the Climate Change Debate"*

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This backgrounder provides a preliminary description of policy options for organizing and dividing responsibilities among private and public participants in a domestic greenhouse gas emissions trading market. It supplements the proposal outlined in the November 1999 Progressive Policy Institute (PPI) policy report *Reframing the Climate Change Debate: The United States Should Build a Domestic Market Now for Greenhouse Gas Emissions Reductions*. The PPI proposal takes advantage of key features of the on-going, successful, market-based sulfur dioxide trading program and Toxics Release Inventory.

Markets thrive on widely available, credible information about prices, supply, and demand. Similarly, a domestic greenhouse gas emissions trading market will depend on the powerful engine of information about actual emissions and climate-friendly behavior throughout the economy. The proposed market would use direct reporting of emissions reductions instead of a government-based certification process. This would be similar to the procedures now employed successfully by the Securities and Exchange Commission to regulate financial reporting, and the Environmental Protection Agency's Toxics Release Inventory for reporting chemical releases to the environment. Market participants would be responsible for the veracity of information they submit to the government and an independently operated greenhouse gas emissions market exchange—and be subject to penalties if the information is found incorrect through government-led spot audits or citizen-initiated legal actions.

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**Table 1. Large Direct Emitters of Greenhouse Gases.**

Initially, sources of carbon dioxide (CO<sub>2</sub>) would receive credits for current emissions ("grandfathering"), with a gradual phase-in of auctioning. Facilities that emit methane and other greenhouse gases would be added to the market after the CO<sub>2</sub> program is operational.

<b>LARGE DIRECT EMITTERS</b>	<b>EXAMPLES</b>
Electric utilities	Fossil-fuel burning power plants
Manufacturing facilities	Factories, assembly plants, refineries
Government facilities	Warehouses, installations, laboratories
Employee-commuters of large employers (>10,000 employees and contractors)	Government agencies, accounting firms, software developers, insurance companies, financial services
Auto fleets (>100 automobiles)	Government agencies (local, state, federal), rental car companies
Bus fleets (>50 buses)	Municipal and regional transit authorities, intercity bus companies, bus rental companies
Truck fleets (>50 trucks)	Parcel delivery, transport companies, beverage companies
Airplane fleets (>10 planes)	Domestic commercial airlines, foreign airlines operating domestically, parcel delivery, charter airlines
Ship fleets (>10 vessels)	Freight lines, cruise lines operating within U.S.
Coal-mining companies (>100 employees)	Surface and underground coal mines (methane)
Industrial agricultural facilities (>500 animals)	Livestock operations (methane)

*Note: An early voluntary action credit program could provide credits in the first year of market operations to companies that certifiably reduced net greenhouse gas emissions in the United States since 1997. However, the total value of early action credits would need to be assessed in the context of the actual trading program, but could be capped at 3 percent of total credits allocated in the first year.*

**Table 2. Small Direct Emitters and Other Potential Market Participants.**

(a) Small direct emitters of greenhouse gases.

<b>SMALL DIRECT EMITTERS</b>	<b>ACTION</b>
Individual drivers (not part of large employee/contractor groups)	Reduction in CO <sub>2</sub> emissions through reduced net fuel consumption; eligible for bundling by "third party" groups [see Table 2(b) below]
Utility customers (commercial, residential, and industrial), including office buildings, apartment buildings, and shopping malls, among others	Any verifiable activity that reduces utility emissions; utilities subject to mandatory "pass through" requirements

(b) Third party organizations who could "bundle" direct emissions for sale or purchase.

<b>THIRD PARTY BUNDLERS</b>	<b>ACTION</b>
Business groups	Aggregate member companies' activities that reduce emissions
Environmental groups	Bundle, purchase, sell, or retire creditable, verifiable actions taken by members
Third-party financiers	Bundle credits purchased from direct and indirect emitters
Equipment suppliers	Bundle emissions reductions resulting from customers' equipment purchases and use (e.g. energy efficient refrigerators or office equipment)
Natural gas distributors	Bundle reductions in natural gas use undertaken by residential, commercial, and business customers

**Table 3. Direct Emitters' Actions and Responsibilities in a Domestic Emissions Market.**

The proposal assumes that emitters would report estimated and actual emissions using reporting procedures similar to the Toxics Release Inventory. Emitters would report their actual totals at the end of each calendar year, allowing use of monitors and annual fuel purchases as the basis for calculation.

STEP	ACTION
1	Document and e-mail <b>actual</b> baseline year emissions (e.g. 2000) for all operations to public website prior to allocation of credits
2	Receive credit allocation from government, adjusted as necessary to reflect difference between <b>actual</b> emissions from current year and credit allowances for next year
3	Participate in quarterly or annual auction of credits (if necessary); purchase or sell credits from other parties (any time throughout the year)
4	Reduce emissions or purchase credits to reconcile <b>actual</b> annual emissions with credits held for the current year (any time throughout the year); and/or sell excess credits to "third party bundler" seeking credits for use in the following year (any time throughout the year)
5	Document and e-mail to public website the <b>actual</b> emissions reductions
6	Return to Step 2 for next year's allocation

**Table 4. Government's Responsibilities in a Domestic Emissions Market.**

Under this market model, credible information reporting by market participants is essential. A governmental entity would act as database sponsor (actual operations would be contracted out to a private sector entity) and would only conduct spot audits, relying on private sector self-regulation and citizen suits for compliance assurance.

STEP	FUNCTION	ACTIVITY
1	Provide technical resources to estimate and verify credits	Supply businesses, agencies, and other market participants with standard emissions rates for use in estimating greenhouse gas emissions and reductions (based on carbon content of fuels and other factors)
2	Select exchange operator	Contract with private sector institution to manage exchange for trading, linked to publicly maintained database
3	Maintain database	Sponsor publicly accessible database/website of emissions reports from direct emitters and other market participants
4	Allocate credits	Set the total emissions cap by determining total reductions required among all market participants to achieve 1 percent annual reduction in U.S. emissions; annually update to reflect emissions of new market entrants and coverage of additional greenhouse gases; determine specific number of credits to be allocated annually to each entity, based on previous year's actual emissions
5	Conduct auction	Auction would make credits available for new market entrants and other enterprises requiring more credits; percentage of credits available for auction could be progressively increased over time; "grandfathered" allocations would be prorated to reflect declining proportion of credits available for allocation each year (and increasing proportion of credits auctioned)
6	Provide full system transparency	Place evidence of annual reductions on public website with penalties for fraud, instead of relying on site-by-site verification (exchange would record all trades in relevant company or agency accounts); evolve system as better analytical methods for calculating emissions and new technologies for reducing emissions become available
7	Enforcement	Conduct spot audits to compare actual emissions with credits held

**Table 5. Example of a Crediting Process for Indirect Emitters of Greenhouse Gases.**

For purposes of illustration, assume a building owner/occupant installs energy efficient elevator motors, lights, computers, and other office equipment.

STEP	ACTIVITY	COMMENTS
1	Applicant submits estimate of annual energy savings to utility as a result of investments and operational changes	
2	Utility has 30 days to respond to estimate, and provide a written commitment to pass through the actual number of credits that match actual reductions in greenhouse gas emissions attributable to changes in applicant's energy use	Applicant not responsible for calculating utility GHG emissions
3	Utility provides appropriate number of emissions credits after one year, based on actual reductions in greenhouse gas emissions attributable to applicant's energy use	Failure to pass through credits in a timely fashion could result in loss of allocated credits to utility or penalties

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