



Highlights of [GAO-09-456T](#), a testimony before the Subcommittee on Energy and Environment, Committee on Energy and Commerce, House of Representatives

Why GAO Did This Study

Carbon offsets—reductions of greenhouse gas emissions from an activity in one place to compensate for emissions elsewhere—can reduce the cost of regulatory programs to limit emissions because the cost of creating an offset may be less than the cost of requiring entities to make the reductions themselves. To be credible, however, an offset must be additional—it must reduce emissions below the quantity emitted in a business-as-usual scenario—among other criteria.

In the U.S., there are no federal requirements to limit emissions and offsets may be purchased in a voluntary market. Outside the U.S., offsets may be purchased on compliance markets to meet requirements to reduce emissions. The Congress is considering adopting a market-based cap-and-trade program to limit greenhouse gas emissions. Such a program would create a price on emissions based on the supply and demand for allowances to emit. Under such a program, regulated entities could potentially substitute offsets for on-site emissions reductions, thereby lowering their compliance costs.

Today's testimony summarizes GAO's prior work examining (1) the challenges in ensuring the quality of carbon offsets in the voluntary market, (2) the effects of and lessons learned from the Clean Development Mechanism (CDM), an international offset program, and (3) matters that the Congress may wish to consider when developing regulatory programs to limit emissions.

View [GAO-09-456T](#) or [key components](#). For more information, contact John Stephenson, (202) 512-3841, stephensoj@gao.gov.

CLIMATE CHANGE

Observations on the Potential Role of Carbon Offsets in Climate Change Legislation

What GAO Found

In an August 2008 report, GAO identified four primary challenges related to the United States voluntary carbon offset market. First, the concept of a carbon offset is complicated because offsets can involve different activities, definitions, greenhouse gases, and timeframes for measurement. Second, ensuring the credibility of offsets is challenging because there are many ways to determine whether a project is additional to a business-as-usual baseline, and inherent uncertainty exists in measuring emissions reductions relative to such a baseline. Related to this, the use of multiple quality assurance mechanisms with varying requirements may raise questions about whether offsets are fully fungible—interchangeable and of comparable quality. Third, including offsets in regulatory programs to limit greenhouse gas emissions could result in environmental and economic tradeoffs. For example offsets could lower the cost of complying with an emissions reduction policy, but this may delay on-site reductions by regulated entities. Fourth, offsets could compromise the environmental certainty of a regulatory program if offsets used for compliance lack credibility.

In a November 2008 report, GAO examined the environmental and economic effects of the CDM—an international program allowing certain industrialized nations to pay for offset projects in developing countries—and identified lessons learned about the role of carbon offsets in programs to limit emissions. While the CDM has provided cost containment in a mandatory emissions reduction program, its effects on emissions are uncertain, largely because it is nearly impossible to determine the level of emissions that would have occurred in the absence of each project. Although a rigorous review process seeks to ensure the credibility of projects, available evidence from those with experience in the program suggests that some offset projects were not additional. In addition, the project approval process is lengthy and resource intensive, which significantly limits the scale and cost-effectiveness of emissions reductions.

The findings from these two reports illustrate how challenges in the voluntary offset market and the use of offsets for compliance—even in a rigorous, standardized process like the CDM—may compromise the environmental integrity of mandatory programs to limit emissions and should be carefully evaluated. As a result of these challenges, GAO suggested that, as it considers legislation that allows the use of offsets for compliance, the Congress may wish to consider, among other things, directing the establishment of clear rules about the types of projects that regulated entities can use as offsets, as well as procedures to account and compensate for the inherent uncertainty associated with offset projects. Further, GAO suggested that the Congress consider key lessons from the CDM, including the possibility that, (1) due to the tradeoffs involving cost savings and the credibility of offsets, their use in mandatory programs may be, at best, a temporary solution to achieving emissions reductions, and (2) the program's approval process may not be a cost-effective model for achieving emission reductions.