



Congressional Budget Office

Capping CO₂ Emissions: Efficiency and Distributional Issues

**Panel I
Director's Conference on Climate Change
November 16, 2007**



Cap-and-Trade Basics

What is a Cap-and-Trade Program?

- **Policymakers set overall cap on carbon emissions**
- **Government requires firms to hold rights (allowances) for their emissions. Requirement could be placed on:**
 - Producers and importers of fossil fuels (Upstream design)
 - Users of fossil fuels (Downstream design)
- **Government allocates allowances. Key decision: Should allowances be sold or distributed for free?**
 - If they are sold, the government decides how to use revenues it receives
- **Firms may buy and sell allowances among themselves**



Potential Effects of a CO₂ Cap-and-Trade Program

- **Reduce environmental and economic damages in the future**
- **Impose costs on the economy in the near term. Cap limits fossil fuel use and raises prices:**
 - **Consumers incur costs to reduce their use**
 - **Some shareholders face a decrease in stock values**
 - **Affected industries include coal (largest), petroleum refining, oil and gas suppliers, utilities**
 - **Losses widely dispersed: Small losses for large number of households**
 - **Some workers may lose their jobs, particularly in coal sector**
 - **Losses concentrated: Small number of households incur large losses**
 - **Price increases aggravate distortions from taxes on capital and labor**
 - **That indirect cost could exceed direct cost in fossil fuel markets**

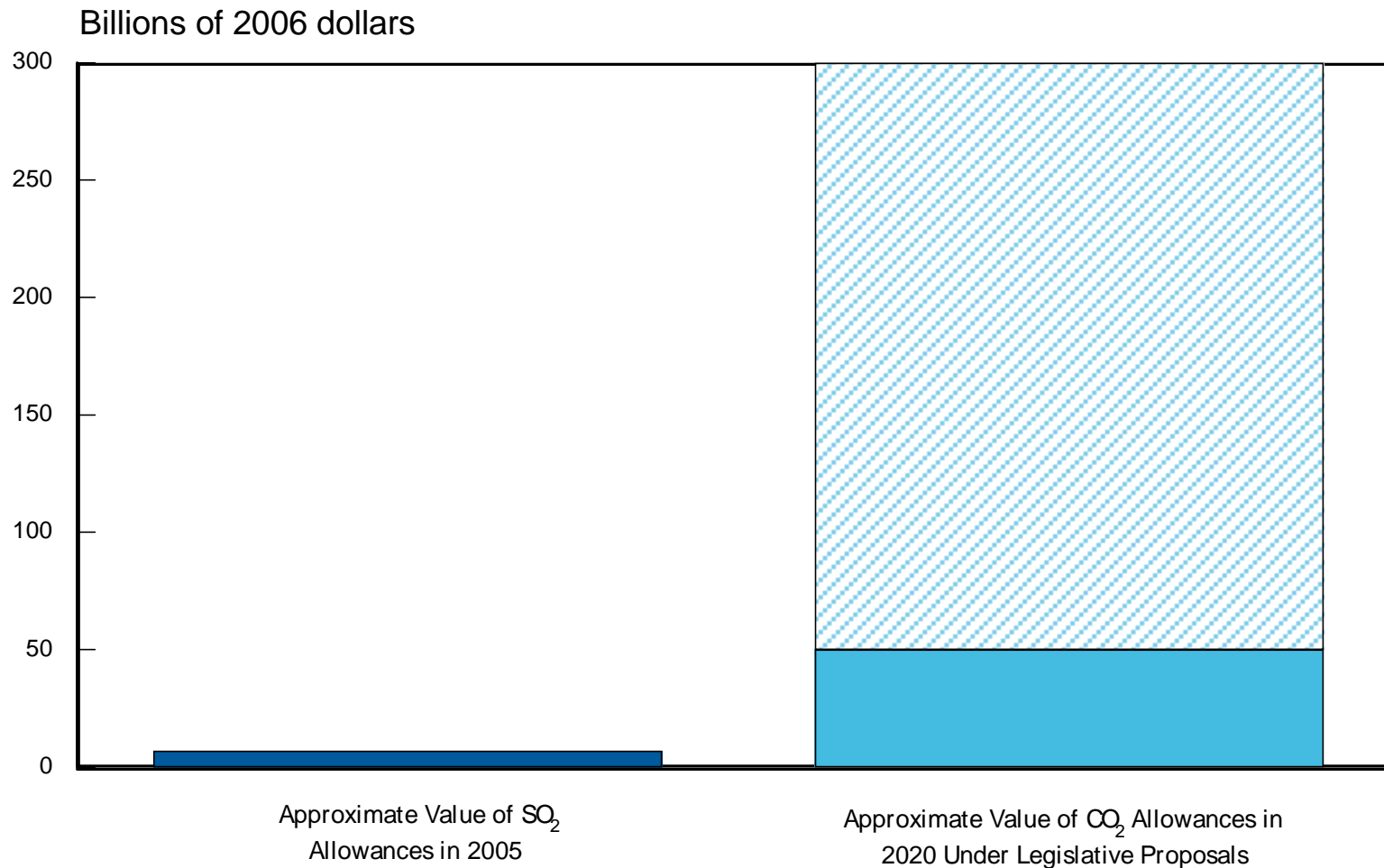


Potential Effects of CO₂ a Cap-and-Trade Program (Continued)

- **Transfer income from bearers of allowance cost to recipients of allowance value**
 - **Market forces would determine who bore the allowance cost**
 - **Primarily borne by consumers in form of price increases**
 - **Policymakers would determine who received the allowance value**
 - **Selling allowances: Government captures value (As it would with a tax)**
 - **Ultimate beneficiaries depend on decisions about how to use the revenues**
 - **Distributing allowances for free: Receiving firms capture value**
- **Allocation decision could affect total cost to economy**



Amount of Income Transferred (Allowance Value) Likely to Be Much Larger Under a Program Capping CO₂ Than SO₂





Presenters Examine Different Pieces of the Puzzle

- **Lawrence Goulder examines:**
 - Net losses to shareholders by industry
 - Effect of allowance allocations on economywide cost
- **Dallas Burtraw examines:**
 - Potential complications should policymakers choose to give allowances to electricity generators
 - Industry-level versus firm-level losses
- **Gilbert Metcalf examines:**
 - Net effect of cap-induced price increases and allowance allocation on households
- **Dick Goettle examines:**
 - Household-level effects and economywide cost using a model that assumes full employment of labor and capital