

**Testimony of William Whitesell  
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**before the  
U.S. House of Representatives  
Committee on Ways and Means**

**The Safe Markets Development  
Approach to Cap and Trade**

**March 26, 2009**

Mr. Chairman, Ranking Member Camp, and Members of the Committee: Thank you for the opportunity to testify today. My name is William Whitesell and I am the Director of Policy Research at the Center for Clean Air Policy (CCAP), a Washington, DC and Brussels-based environmental think tank with on-the-ground programs in New York, San Francisco, Mexico City, Beijing, Jakarta and many other places. I am an economist who previously served at the Federal Reserve, where I had responsibilities for the analysis of financial market developments and the implementation of monetary policy.

Since 1985, CCAP has been a recognized world leader in climate and air quality policy and is the only independent, non-profit think tank working exclusively on those issues at the local, national and international levels. CCAP helps policymakers around the world to develop, promote and implement innovative, market-based solutions to major climate, air quality and energy problems that balance both environmental and economic interests.

CCAP is actively working on national legislation in the United States and is advising European governments as well as developing countries such as China, Brazil, and Mexico on climate and energy policy. Our behind the scenes dialogues educate policymakers and help them find economically and politically workable solutions. Our Future Actions Dialogue provides in-depth analyses and a “shadow process” for climate negotiators from 30 nations from around the world to help them develop the post-2012 international response to climate change. We also facilitate policy dialogues with leading businesses, environmental groups and governments in the European Union and the U.S. on designing the details of future national and transatlantic climate change mitigation, adaptation and transportation policies.

CCAP played a major role in the design and passage of the SO<sub>2</sub> trading system enacted in the 1990 Clean Air Act Amendments and was the lead consultant in the original design of the European Union’s Emissions Trading System (EU ETS). It has also helped develop national, regional, state and local climate policies in the U.S. and many other nations, including emission mitigation policies, smart growth initiatives, forestry policies and innovative approaches to climate adaptation.

Mr. Chairman, CCAP strongly favors the passage of cap-and-trade legislation to control greenhouse gas emissions. You have asked us to comment today on addressing price volatility in climate change legislation. Alternatives for climate change legislation differ significantly in the manner in which they address price volatility and also in the extent to which they ensure environmental certainty and foster the development of a carbon market.

At one end of the spectrum is a carbon tax which—barring Congressional intervention—would provide certainty about the price of each ton of emissions. It would also eliminate volatility, as there would be no carbon market. Firms would merely pay the U.S. Treasury for their emissions. However, the trade-off for the carbon price guarantee is that the quantity of emissions cannot be predicted or guaranteed. Even if legislation provided for a rising carbon tax over time, the level of the tax or its rate of increase might be too low to achieve the reductions in emissions that we will need to meet climate objectives.

At the other end of the spectrum is a pure cap-and-trade program that lacks an effective method for limiting price volatility. It guarantees annual emission levels by setting a cap and creates a carbon market by allowing trading in carbon emission allowances. The trading of allowances, along with allowance banking (the ability of firms to carryover extra allowances from one year to the next), gives regulated firms additional flexibility in timing their compliance investments. However, allowance prices may become volatile in a cap-and-trade program. Moreover, market manipulation and excess speculation could cause booms and busts in prices just as we have seen recently in commodity and financial markets.

Today, I would like to tell you about an idea CCAP developed called the Safe Markets Development Approach. It is a cap-and-trade program that incorporates some of the beneficial features of a carbon tax. During the early years of the program (2012 – 2019), it combines the greater price predictability of a carbon tax with the emissions certainty of

a cap-and-trade program. As its name implies, it provides "training wheels" for the development of a new carbon market, eliminating opportunities for market manipulation and excess speculation while providing companies and regulators time to gain experience with the new market. To create more predictable emissions allowance prices, the Approach borrows time-tested methods that the Federal Reserve uses to manage interest rates. The Safe Markets Development Approach also enforces cumulative emissions reductions while allowing some fluctuation in annual emissions as needed to stabilize allowance prices in the early years of the program. Beginning in 2020, the program moves to a more traditional cap-and-trade program with annual emissions caps.

We are very pleased to have worked closely with Representatives Doggett and Cooper on their bill called the Safe Markets Development Act, which reflects these concepts. We would like to thank them for their leadership and effort to find a middle ground solution that both carbon tax and cap-and-trade advocates could support.

### **Why Did CCAP Develop the Safe Markets Development Approach?**

CCAP developed the Safe Markets Development Approach for two reasons. First, we are concerned with the possibility that carbon allowance prices in a cap-and-trade program could fluctuate widely much like the prices of other commodities and carbon allowances in the European Emissions Trading System (EU ETS). Second, we are concerned with proposals that would set a fixed price or a formulaic increase in carbon prices over time that would be insufficient to reduce emissions enough to avert the worst effects of climate change.

Chart 1 demonstrates clearly what has happened to commodity prices in recent years. It shows prices since 1994 for a broad index of commodities that includes energy, metals, and agricultural goods. Prices surged to unprecedented levels in mid-2008 before collapsing in recent months.

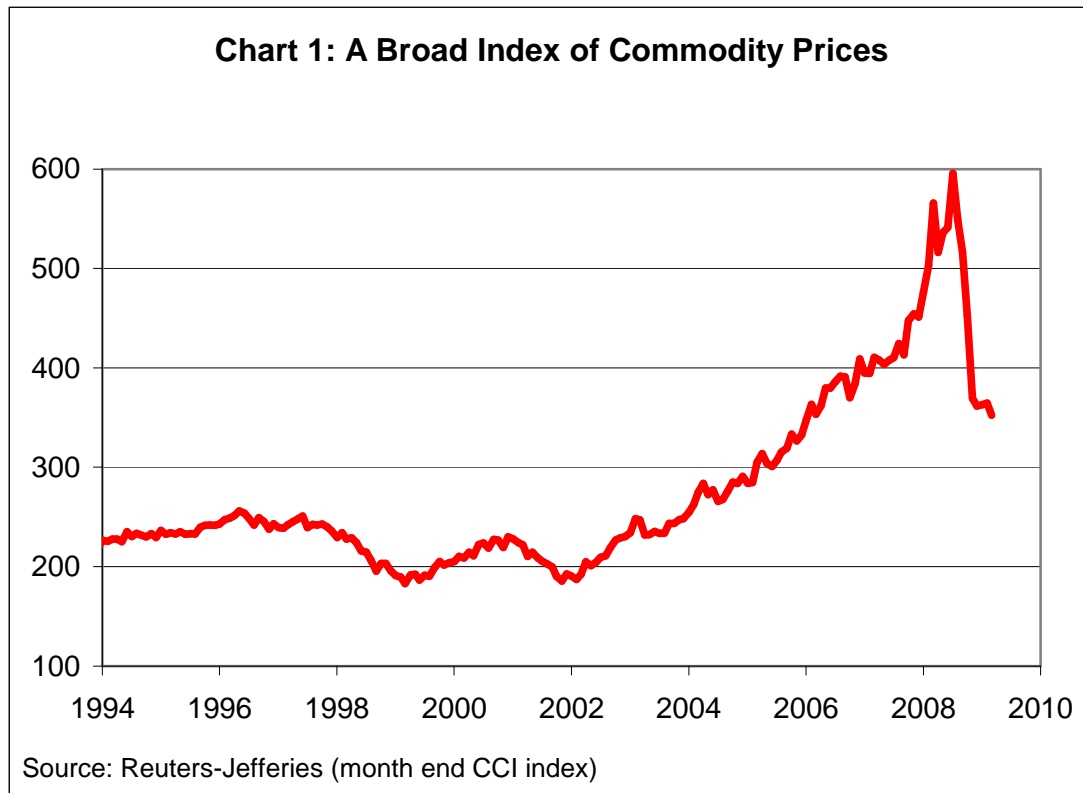
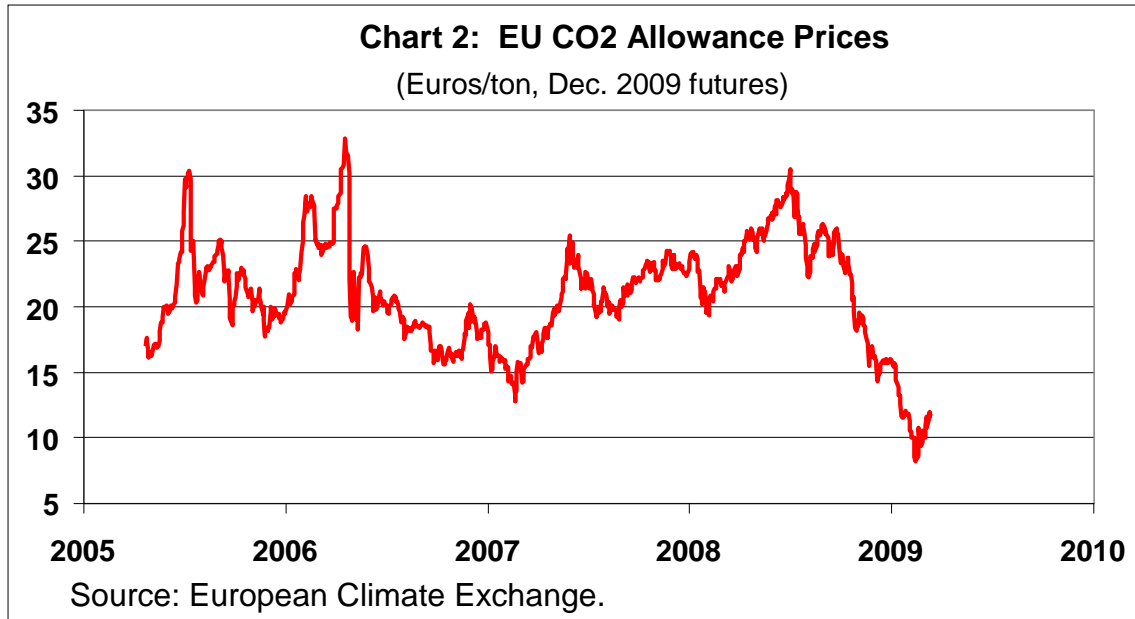


Chart 2 shows the December 2009 futures price for carbon allowances in the EU ETS. It is a good barometer for emission allowance prices in general over the last year or so. While allowance price fluctuations in the 2005-to-2007 period were to be expected as this was a pilot phase focused on “learning by doing,” the price fluctuations in 2008 appear to reflect the problems in the larger economy. The price of carbon allowances peaked at over 30 Euros per ton in mid-2008 before dropping to around 10 Euros in recent months. Application of a Safe Markets Approach in this period would have stabilized those prices and produced greater emissions reductions and environmental benefits.



Price booms and busts may occur in financial and commodity markets for many reasons. Some fluctuations in prices occur because supply and demand rises and falls. More severe swings in prices may occur because of manipulation, gaming of the system, and excess speculation. In addition, financial markets are subject to herd behavior in that investors are often influenced by the expectations of other investors about future developments.

In recent years, large amounts of financial capital from hedge funds, pension funds, and endowments have moved in and out of commodity investments, contributing to the swings in prices. Many of these institutional investors chose to diversify their financial portfolios by investing in mutual funds that track commodity price indexes. It is entirely conceivable that the market for greenhouse gas emission allowances will become large and liquid enough that the price of allowances will be included in an index of commodity prices. If so, investors placing money in a commodity index fund would be indirectly investing in emission allowances. The flows of financial capital in and out of carbon allowances from institutional investors, whether through index funds or other means, could contribute to the creation of large fluctuations in allowance prices.

### **Price Volatility Undermines Investments That Reduce Emissions**

Wide price swings would be harmful to the development of a new carbon market in the United States. In the early years of a cap-and-trade program, regulated firms will be planning to reduce their emissions. If carbon prices are uncertain, these firms will face more difficult investment choices. Some firms may mistakenly invest in high-cost projects they should not have invested in while others may fail to invest in low-cost projects that should have gone forward. The overall costs of reducing emissions would therefore be higher than necessary. In addition, fears of or the reality of manipulation in the trading of allowances could undermine support for a cap-and-trade program.

### **Cap and Trade Provides Needed Environmental Integrity**

Concerns about price volatility and market disruptions must be balanced with the need to meet specific emission reduction goals that could help avoid the worst effects of climate change. It is well accepted that fixing the price of carbon permanently by law through a carbon tax or other means may not generate sufficient emission reductions to reduce climate risks to acceptable levels. That is why CCAP has anchored the Safe Markets Development Approach in a cap-and-trade framework, which sets an emissions cap and is widely viewed as most likely to achieve needed emissions goals.

However, the Safe Markets Development Approach modifies a traditional cap-and-trade program in its early years by shifting from enforcing annual emissions targets to enforcing cumulative emissions over several years. By doing so, we gain the ability to create more predictable allowance prices without sacrificing environmental integrity. We believe the weight of scientific evidence does not compel solutions focused only on fixed annual emissions reductions. Carbon dioxide (CO<sub>2</sub>) is unlike conventional air pollutants, such as particulate matter, which have direct local and regional health impacts based on the concentration of the pollutants released at a given time to the atmosphere. In contrast, CO<sub>2</sub> is very long-lived in the atmosphere and its impacts are long term rather than acute. What matters for the climate are the cumulative global greenhouse gas emissions through

2050. We care about medium term levels such as the cap in 2020 because it affects our ability to meet cumulative emission goals. CO<sub>2</sub> is an ideal pollutant for application of the Safe Markets Development Approach as we do not face any short-term environmental health trade-off by allowing some year-to-year variability in cap levels.

### **How Does the Safe Markets Development Approach Work?**

Between 2012 and 2019, Phase I of the program, an independent Board would manage carbon prices to achieve price predictability and meet environmental goals. Before each year, the Board will publish a forecast for the entire Phase I period which will include gradually rising allowance prices and declining emissions needed to reach a hard 2020 emission cap. The forecast price for the coming year will be set as a target price for that year. The Board will adjust the number of allowances sold in quarterly auctions during the year to keep the average allowance price for the year fairly close to the target price. The Board will consider both the auction and the secondary markets in deciding how many allowances to sell. Regulated firms will be permitted to bank a small number of allowances year-to-year. That will help maintain the price target and provide a cushion for regulated firms so they don't need to buy the number of allowances that exactly matches their emissions for the year. The relative stability of prices within a trading year, along with limits on allowance banking, will eliminate opportunities for manipulation, gaming of the system, and excess speculation, as those types of behavior would fail to move market prices.

This method of setting a price target and managing the auction process to maintain that price is adapted from the procedures the Federal Reserve (Fed) uses in managing interest rates. Many people think that the Fed directly sets the key interest rate it uses to implement monetary policy. However, the truth is that the Fed does not directly control that interest rate. The interest rate is determined in a private sector market in which more than \$100 billion is traded every day. The Fed tries to achieve its target interest rate by announcing the target and then using auctions that are called open market operations. The Fed adjusts the size of these auctions as needed to achieve its target interest rate on

average in trading in the private sector market. While some trading occurs at interest rates slightly different from the Fed's target, the Fed is very successful at keeping most trading close to the target. The resulting price stability also means that market manipulation and excess speculation are virtually absent from this market.

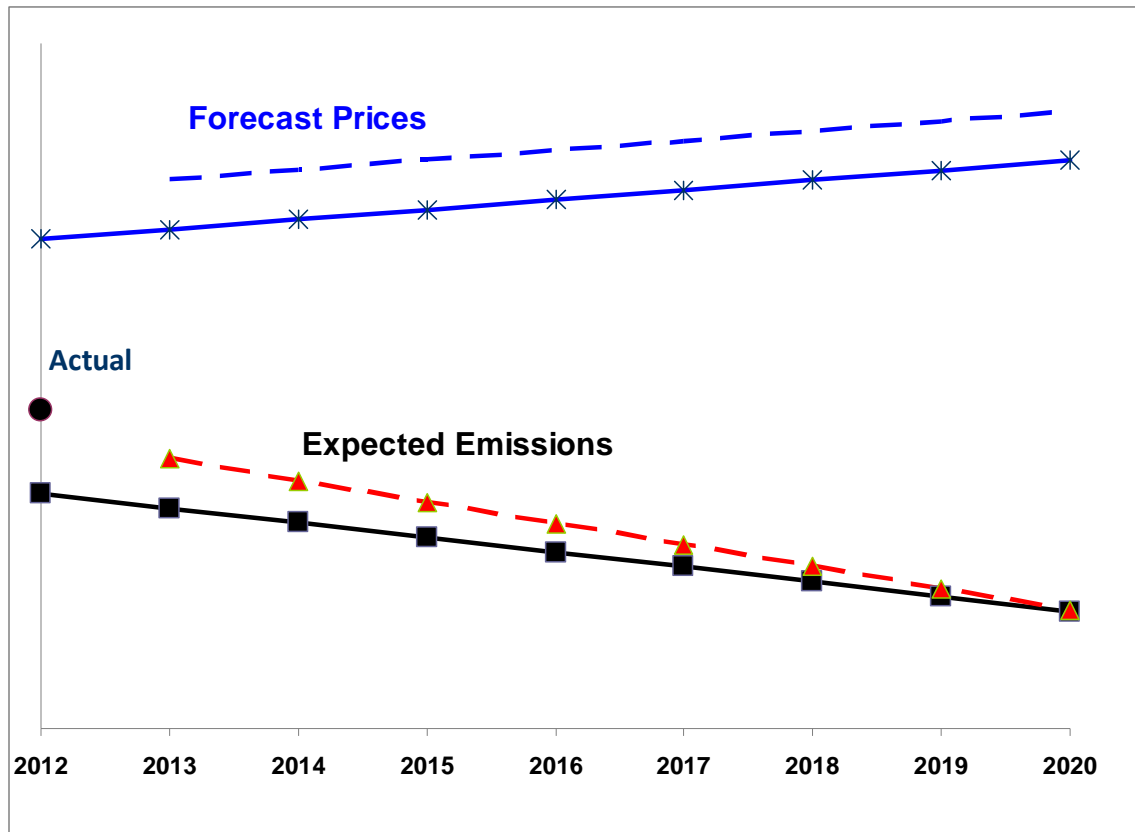
One of the strengths of the Safe Markets Development Approach to cap-and-trade relative to a carbon tax is that the Board will reassess progress at the end of each year and adjust the allowance price to stay on track for meeting the 2020 emissions goal. To do this, at the end of the year, the Board will compare actual emissions with its prior expectations. It will then revise its forecast price path if needed to ensure that the trend path of gradual emissions reductions is in line to achieve the 2020 emissions target. In deciding whether to modify its price and emissions forecast each year, the Board will analyze the reasons why actual emissions during the prior year were above or below the forecasted level. If the differences are attributable to temporary influences, such as unusual weather or transitory fluctuations in economic activity and energy use, the Board will not adjust the forecast path for prices. These temporary factors are expected to average out over time.

If the differences are likely to persist in future years, such as changes in the baseline emissions intensity of the economy (i.e., the emissions per unit of gross domestic product) or in the long run costs of new technology to reduce emissions, the Board will revise the overall forecast path for prices. After completing its review of the price forecast, the Board will announce its target price for the year ahead. The Board must then provide a full report to Congress in writing and in testimony before the appropriate committees in both the House and Senate. The report will assess the progress toward emissions goals, the effectiveness of the program procedures, the behavior of carbon markets, the revision — if any — in the price forecast, and the reasons why the Board chose the coming year's target price.

Chart 3 is a simple example of how the Board would adjust its forecast price path to meet 2020 emission goals. The Board's initial forecast of rising allowance prices is the solid

blue line. That price path would be designed to achieve a gradual decline in emissions, such as that shown by the lower black line with square markers. Actual emissions might come in above or below expectations in the first year. In the example shown by the round dot, actual emissions exceed expectations. If emissions were higher than expected because of temporary factors, the Board would make no change in its price forecast. However, the chart assumes a worst case situation, where the excess emissions are largely attributable to causes likely to persist in future years. The Board therefore needs to revise up its price forecast, as shown by the dashed blue line. The revised forecast path for emissions is the dashed red line with triangle markers.

**Chart 3: An Example of the Safe Markets Development Approach**



The Board would consider adjustments in the forecast price path each year. In some years, actual emissions will be below expectations, just as they would be this year if this program had been in effect because of weaknesses in the economy. In those years, if emissions were likely to continue to be below original expectations, the price forecast could be lowered. Ultimately, the Safe Markets Development Approach ensures that emissions will be on a gradual path to the specific emissions goal for 2020 and should be very close to the cumulative emissions required through 2020. To the extent that cumulative emissions exceed the required levels, this small amount will be automatically made up in the next ten-year period. If cumulative emissions come in less than expected during Phase I, it would be taken as a gain for the environment and no upward adjustment would be made in future allowances.

We believe this approach will be more effective than either a safety valve (which sets a price at which allowances will automatically be issued) or an allowance reserve (which creates a reserve pool of allowances that are released at a given threshold price). Both of these price ceiling approaches are less effective at controlling price volatility and, even more importantly, involve much greater environmental risks. With either a safety valve or an allowance reserve, if the price ceiling turns out to be too low, a large amount of allowances will be released. When a safety valve is used, the cumulative emissions budget is violated. In the case of an allowance reserve, the borrowing of allowances from the future may be so substantial that it can never be repaid except at an allowance price that causes severe economic harm. Thus, with either of these price ceiling approaches, the crucial cumulative emissions budget and the ultimate environmental goal could be profoundly threatened.

Beginning in 2020, the Safe Markets Development Approach will transition to a traditional cap-and-trade program, with hard annual emission caps and looser limits on allowance banking. Alternatively, the features used in Phase I could be continued. The Board will conduct a thorough review of the program in 2017 and include any recommendations for adjustments in the design features for Phase II. The experience gained by regulated firms and by market regulators during the early years of the program

will help ensure confidence in the operation of the carbon market when the "training wheels" are removed.

In sum, CCAP believes that the Safe Markets Development Approach combines the best features of cap-and-trade and carbon taxes: It provides a high level of environmental integrity along with predictable carbon prices. It eliminates incentives for manipulation and speculative excess in the early years of the program, thereby creating confidence in a new carbon market.