

Appendix X

Cap-and-Trade

C&T-1. Greenhouse Gas Cap-and-Trade

Policy Description

A cap-and-trade system works by setting an overall limit on emissions and either selling or distributing at no cost emissions “allowances” or permits to regulated entities or sources. These regulated entities must periodically surrender enough allowances to match their reported emissions or face a penalty. In a system that freely grants allowances those sources which are able to reduce their emissions at a lower cost than the allowance price may do so and sell unused allowances to those who cannot achieve reductions as cost effectively. In a system where allowances are initially sold, cost effective emissions reductions reduce the number of allowances that must be purchased. By creating a market for the allowances, regulated entities have the choice of either purchasing permits or directly reducing emissions, and as a result resources are directed to the most cost effective emissions reduction investments. To achieve overall emissions reductions over time, programs gradually lower the emissions “cap” by reducing the total number of available allowances.

Perhaps the best known example of cap-and-trade is the U.S. EPA program to cut sulfur dioxide emissions from power plants. Established under the 1990 Clean Air Act, this program successfully proved the emissions trading concept by achieving dramatic, cost-effective reductions. More recently the trading approach has been applied to greenhouse gas emissions by the European Union¹ and proposed by several U.S.-based initiatives including the Regional Greenhouse Gas Initiative in the Northeast,² and the Western Climate Initiative.³

On July 13, 2007, Governor Charlie Christ executed Executive Order 07-128,⁴ which created the Governor’s Action Team on Energy and Climate Change (Action Team). The Action Team is charged with identifying means by which for Florida can fully achieve or surpass the statewide greenhouse gas reductions specified in Executive Order 07-127.⁵ These recommendations need to be guided by an evaluation of the possible consequences to Florida’s environment, economy, and society from global climate change. During 2007, the Action Team issued their Phase I Report. The report offers broad policy guidance in key areas for consideration by the Governor

¹ <http://ec.europa.eu/environment/climat/emission.htm>

² <http://www.rggi.org>

³ <http://www.westernclimateinitiative.org>

⁴ <http://www.flclimatechange.us/ewebeditpro/items/O12F15075.pdf>

⁵ <http://www.flclimatechange.us/ewebeditpro/items/O12F15074.pdf>

and Legislature or further consideration by the Action Team, including a market-based regulatory approach for utility emissions.

On June 25, 2008, Governor Crist signed House Bill 7135, a comprehensive energy and economic development package aimed at reducing greenhouse gas emissions as well as encouraging investment in alternative and renewable energy technologies. Sec. 65 of the Florida Climate Protection Act (HB7135) calls for the DEP to propose rules for the creation of a cap-and-trade regulatory program to reduce greenhouse gas emissions from major emitters. This policy is the result of the Phase II investigation called for in the Phase I report and offers pre-rulemaking guidance to the Department in response to the requirements of the Florida Climate Protection Act.

There is growing expectation that Congress will require a federal cap-and-trade program perhaps during the next administration. By initiating, joining or developing a state and/or regional cap-and-trade system in the meantime, Florida would be taking an important step toward potentially influencing the outcome of the federal policy debate in its favor.

Policy Design

Ultimately the pollution-cutting performance of a cap-and-trade program depends largely upon how it is structured. Key design parameters are discussed separately below.

Reduction Targets and Timeframes

The schedule for GHG emission reductions is pursuant to Executive Order 07-127 and is shown in Table X-1.1.

Table X-1.1. Title

Year	GHG Reduction Goal
2017	2000 levels
2025	1990 levels
2050	80% below 1990 levels

Sector Coverage

The regulation of greenhouse gas emissions should be economy wide and commence as soon as possible; however a cap-and-trade program may only apply to a limited number of sectors. Sector inclusion in the cap-and-trade program should be guided by administrative efficiency, overall reduction potential, experience by other jurisdictions and whether alternative policies are preferred. The Florida cap-and-trade program should include the electric sector at the beginning. Rulemaking consideration should be also given to including (1) industrial stationary source emissions; (2) residential and commercial fuel use; and (3) energy extraction, processing and transportation. These sectors may be better candidates for inclusion in a subsequent phase. The transportation sector could also be considered through rulemaking, but it is not well understood. Transportation should be studied further and considered for inclusion in a

subsequent phase or determined to be better suited for regulation through non-cap-and-trade market mechanisms. While these and other sectors may not be included in the cap-and-trade program or otherwise regulated at the program start, they should be included or otherwise regulated as soon as possible.

Other sectors may need alternative methods of regulation over time based on the factors listed above. If forestry, agriculture, and waste management are regulated under the cap-and-trade program then they could not participate in the offset program.

There should be a de minimis exemption below which sources within the regulated sectors would be exempt from regulation. The threshold of the exemption could vary by sector.

Regional Programs

First and foremost, a strong national cap-and-trade program is the preferred method for addressing the reduction in greenhouse gases, and Florida should advocate for a national program.

As the federal government deliberates on a national program, Florida should join a regional program to advance its greenhouse gas reduction goals. Toward that end, Florida should further examine the economics of joining a regional program, and should not join a regional program where the analysis indicates that Florida would be disadvantaged.

Initial analysis indicates that Florida would benefit from joining the Northeast Regional Greenhouse Gas Initiative (RGGI). **[Insert summary of modeling results when completed here]** Because RGGI begins on January 1, 2009, and has a three-year compliance period, the earliest Florida could join would be in 2012. This will give ample opportunity to conduct further economic analysis and observe the early operation of RGGI. Florida may seek “observer” status with RGGI to closely monitor progress and prepare for membership if it is desired.

Initial analysis indicates that Florida would benefit from joining the Western Climate Initiative (WCI). **[Insert summary of modeling results when completed here]** Because the earliest WCI expects to begin is January 1, 2012, this will give ample opportunity to conduct further economic analysis and observe the early operation of WCI. Florida may seek “observer” status with WCI to closely monitor progress and prepare for membership if it is desired.

These two regional programs may not be mutually exclusive. Florida should explore the economics and potential obstacles, complications and benefits associated with joining both.

At the same time Florida should reach out to the other Southern states in the hope of collaborating with our neighbors to (1) jointly influence the development of a national cap-and-trade program, (2) explore the potential for multiple Southern states joining one or more regional programs, and (3) explore the creation of a Southern regional climate initiative to reduce greenhouse gas emissions, stimulate the development of renewable energy sources,

reduce our dependence on imported fuels and stimulate the creation of industries specializing in energy efficiency, renewable energy and carbon mitigation technologies.

Finally, we strongly recommended that Florida should not pursue a one-state cap-and-trade program.

Caps and Goals

Florida's greenhouse gas reduction cap-and-trade program should be designed to achieve the emission reduction goals set forth in the Governor's Executive Order 07-127. However, as directed in Executive Order 07-127 and the recently enacted Florida Climate Protection Act, Florida should evaluate the conditions under which the state could cost-effectively link its trading system to the systems of other states or regions such as the Regional Greenhouse Gas Initiative (RGGI).

If Florida joins a regional climate initiative, Florida should accept the regional goal as long as it is consistent with the state's GHG reduction goals. Current modeling indicates that RGGI should bring Florida's electric sector to the state goal; however, if it does not, additional policies and measures would be required to reduce greenhouse gas emissions to meet the state goal.

Flexibility and Cost Containment Mechanisms

The mechanisms described below contain a brief description followed by the policy recommendation.

- *Offsets*—Offsets are out-of-sector emission reduction or carbon sequestration projects that are recognized by the program as qualifying for allowance credit. By definition, offsets must be measures that are not required by the program and, in most cases, they cannot be required by any emission reduction program. They provide an incentive for low-cost investments in emission reductions as an alternative to higher-cost, in-sector reductions or allowance purchases. *Recommendation: The cap-and-trade program should allow offsets without limits; however, the offset program must ensure rigorous quality standards. Within any offset program, agriculture, forestry and waste should have their emissions included in life cycle costs before they could be offered as an offset.*
- *Safety Valve*—A "safety valve" is a program feature designed to limit or moderate the cost of allowances for the purpose of ensuring that the program will not have an unacceptable impact on consumer costs. Safety valves can be as direct and simple as an allowance price cap or as complex and indirect as the RGGI's stepped expansion of offset opportunities triggered by allowance prices. The safety valve can be used in conjunction with other tools to mitigate price volatility (such as banking and borrowing). It should be noted that hitting the safety valve price cap would effectively convert the cap-and-trade program into a carbon tax at that price. *Recommendation: The cap-and-trade program needs an appropriate allowance price containment mechanism, especially in early years. Further study is needed before the specific mechanism can be recommended.*

- *Banking*—Banking permits allows holders to withhold unneeded allowances from the market, or from surrender for emissions compliance, without expiration. A banked allowance may be used in any compliance period beyond the issuance period without penalty. Banking is seen as a means of mitigating market volatility by allowing holders to hang onto allowances (thereby mitigating supply) when prices are low, and to use or sell them (thereby mitigating demand) when prices are high. *Recommendation: The cap-and-trade program should allow unlimited banking.*
- *Borrowing*—Borrowing of allowances permits emitters to release excess tons of GHGs in the current compliance period in return for greater reductions in a future compliance period. *Recommendation: Borrowing is an important cost containment mechanism and should be allowed, but agreement was not reached on what conditions (Warner-Lieberman-type limits by emitter, time limits, interest, etc.) should be imposed.*

Allowance Distribution

One of the most difficult issues confronting cap-and-trade program designers is how the allowances are initially introduced to the market. The two principal methods are free allocation and auction sale. Free allocation is the method used in the EPA SO₂ trading program and was widely used in the first two phases of the EU ETS program. RGGI will auction nearly 100% of their allowances and the EU is gradually moving in the direction of greater reliance on auctions. WCI is still deliberating on the issue.

Under a free allocation system issuing jurisdictions distribute allowances free of charge to regulated entities according to a formula, based upon historical emissions, benchmarked emissions (the expected emissions per unit output for a facility with a preferred technological configuration) or on some other basis. Free allocation systems typically need provisions (typically a “reserve”) for new market entrants to avoid creating a competitive disadvantage and other equity features. The formula determining the number of allowances allocated to each source can be challenging to create. Historical emissions are a common approach but issues such as selecting the time period to use as a basis and various equity adjustments can be difficult. Benchmarking is straightforward in principle but very difficult to achieve in practice.

Under an auction system, allowances are presented to the market by sale at auction. Regulated entities are therefore required to purchase allowances. Revenues are collected by the issuing jurisdiction. Auctioning allowances resolves all the “allocation basis” and many equity issues arising from the free allocation method, but presents a new set of challenges including the additional cost imposed on the regulated entity. Emitters in some sectors are able to pass these costs onto their customers, but others are not. The cost passed along to the consumer may be a public policy concern, and in cases where competitive pressure prevents this, the economic impact on the emitter might be a concern. In addition, there is the question of what the issuing jurisdiction will do with the auction revenues.

There also exists a concern for “windfall profits” resulting from free allocation, as happened in some instances in the EU. This can be an issue when the emitter is not price regulated but is free

to pass the cost along to customers, as is the case among generators in most of the RGGI states. In states where generators are price regulated, such as Florida, the “value” of the freely allocated allowance can be directed to the benefit of the ratepayer through rate setting.

Free allocation and auctioning are not mutually exclusive. Programs can distribute some percentage of allowances using one method and the balance with the other. Programs may change the ratio of free allocation/auction distribution over time. Programs may distribute allowances to different regulated sectors using different methods, or a different mix of methods. Programs may even distribute allowances differently among different classes of sources within a sector (i.e., municipal utilities, co-ops, and investor-owned utilities).

The Cap-and-Trade TWG was not able to reach consensus on the question of allowance distribution. Some members strongly favored the use of auctions for 100% of the allowances while others objected equally strongly to any use of auctions whatsoever. When asked, “Could you support the use of auctioning for allowance distribution to some degree, i.e., from 1% to 100% of all allowances?” the vote was 7 in favor of *some* use of auctioning to 5 opposed to *any* use of auctioning.

Those opposed to any use of auctioning cited impacts on ratepayers, stating that the allowance cost would be added to the cost associated with investments in reduced emissions. One non-utility member stated that international competitive pressure would prevent them from passing the allowance cost onto their customers, weakening the company in the face of out-of-region competition. Another concern expressed was that small entities such as municipal and cooperative utilities would be a significant disadvantage in the allowance market due to the fact that, unlike speculators, they must have allowances to legally operate but due to their size may not be able to acquire them.

Those supporting some or exclusive use of auctioning expressed the belief that a properly designed auction would be the fairest method of ensuring that all market players were treated equally. One utility advocate of 100% auctions indicated that their customers were already paying a higher cost for the clean energy investments they had made in the past, and a typical free allocation system would actually reward utilities offering lower rates that have historically invested in less clean generation. Others supporting auctions pointed to the public benefits that could accrue from returning or reinvesting the auction revenue into consumer price mitigation measures, energy efficiency investments, or the development of new emissions-reducing technologies.

The TWG offers the following general recommendation which could guide future policy makers in answering this question.

The cap-and-trade program should strive to be revenue neutral to consumers as much as possible. There are four broad purposes to which allowance value (either the allowances themselves or proceeds from their sale) should be applied. These are not in any priority order:

- Promote energy efficiency investments;
- Mitigate impacts on ratepayers/consumers with particular attention to low income consumers;
- Promote renewable or non-carbon technologies.
- Mitigate impacts of climate change, i.e., fund adaptation strategies.

It is our strong recommendation that if any revenues are generated from the sale of allowances they should never be used to supplement general revenues to the State of Florida.

Reporting

The cap-and-trade reporting system should be consistent with any national requirement. Every effort should be made so that regulated entities are required to complete only one report for both the state and the national efforts. The reporting system should be as broad as possible given administrative and cost concerns.

Leakage

Leakage occurs when, in response to program incentives utilities choose to either increase out-of region fossil-based power purchases or investors choose to construct new generation units in unregulated border jurisdictions. In either case, both the environmental benefits and in-state investment are lost. It is noted that in a national program leakage is not an issue. Leakage can be addressed through careful design of the point-of-regulation, as in the First Jurisdiction Deliverer (FJD) plan in WCI. FJD requires compliance from any generator within the region plus any entity that imports fossil-based power from outside the WCI region.

With the exception of the panhandle, Florida’s geography limits the opportunities for leakage. Historically, imports have been a minor portion (~8%) of total consumption, so leakage may not prove to be a major concern for a Florida cap-and-trade program, but further study and analysis should be undertaken and if a program is adopted leakage should be carefully monitored.

Trial Period

TBD

Federal Program

TBD

Implementation Mechanisms

As stated above, these recommendations should be reviewed by the DEP and used as a basis for drafting proposed rules in response to the requirements of the Florida Climate Protection Act (HB7135). Through the rulemaking process additional program modeling and economic analysis should be performed to more precisely ascertain costs to regulated entities and consumers as well as economic benefits from reduced consumption of fossil fuel and other co-

benefits. Pursuant to HB7135, rulemaking should be completed by the end of 2009 and proposed rules presented to the legislature for ratification in 2010.

Related Policies/Programs in Place

All GHG mitigation policies and measures within capped sectors have the potential to affect cap-and-trade program costs and benefits. Related programs include RGGI, WCI, and the Midwestern Governor’s Accord (MGA).

Type(s) of GHG Reductions

This may depend upon the sectors included and the program design. At a minimum, CO₂ will be reduced. However, a multi sector program, especially one including industrial emissions, could reduce emissions of all six major GHGs.

Estimated GHG Reductions and Costs or Cost Savings

TBD by modeling

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD