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M E M O R A N D U M

TO: ETAAC Committee
FROM: Larry Goulder
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SUBJ: Comments on ETAAC 15 Nov. '07 Draft Report

California has taken the lead in commitments to climate change policy in the U.S. If the state's efforts succeed, this will promote efforts in other states and at the national level. If it fails, it could set climate policy efforts considerably.

The November 15, 2007 draft report of the ETAAC takes major steps toward assuring success in California. The report is clearly written and sets the right tone, carefully considering pros and cons of various options. It offers a great many options – including several intriguing and novel ideas – for promoting the use of existing cleaner technologies as well as bringing about invention of new technologies. The report is impressive in its scope and should be most useful to the CARB.

In these comments I will focus on ways that this already impressive draft could be improved. I appreciate the opportunity to provide comments to ETAAC and I hope these comments are useful.

General Comments

1. The report (including the introduction) should distinguish between (a) policies to promote use of existing clean technologies ("technological substitution") and (b) policies to promote invention of new technologies ("technological change" – or perhaps what the report generally refers to as "innovation"). This is not hair-splitting. It relates directly to the differing rationales for the different policies, as discussed below.

2. The report is impressive in the range of policies recommended. However, it is generally lacking in providing relevant principles to support the idea that the policies will create benefits in excess of their costs. Beyond the issue of distributional equity, a major consideration should be

whether a particular policy would bring about net social benefits. This depends on whether the policy addresses market failures. Several relevant market failures include:

-- ***appropriability problems*** (inability of private investors in R&D to appropriate all the knowledge gained and thus the social return from their investments. This implies insufficient investment in innovation
-- ***information problems*** according to which consumers make inappropriate decisions, even when GHGs are priced
-- ***principal-agent problems*** according to which the decision maker (e.g., an apartment renter whose heating costs are covered in the rent) doesn't internalize all the benefits from his/her decision (e.g., the decision regarding how much to conserve on apartment heating)
-- ***decisionmaking by public institutions.*** To a large extent, the public sector does not respond to price signals in the way private decisionmakers do (since they generally are not profit-maximizers or utility maximizers). These include infrastructure investments, government-provided R&D, etc.
-- ***significant co-benefits.***

These are market failures that would *not* be addressed by a cap-and-trade system. *The report should use these (and perhaps other) sources of market failure to defend the policies it proposes.* It should provide clear filters to indicate where and why certain policies are needed in terms of efficiency. At present, the report offers a smorgasbord of policies, but I have the strong sense that many of these policies do not have a clear efficiency rationale. I worry that California's efforts could become a hodgepodge involving excessive administrative costs and redundancy in economic impacts. This could ultimately hurt efforts for climate policy outside of California.

These sources of market failure relate to the distinction between promoting technological substitution and promoting invention (or innovation). The appropriability problem pertains mainly to the invention issue, while principal-agent and co-benefit issues relate more closely to technological substitution or conservation.

3. As a related point, the report should differentiate between (a) policies that are needed if a cap-and-trade system is included in California's efforts, and (b) (additional) policies that are needed if a cap-and-trade system is not included. This is a fundamental issue. Cap-and-trade addresses the market failure associated with the external costs from combustion of GHGs. If cap-and-trade is in place, many of the additional policies recommended by the report would not need direct promotion – price signals from cap-and-trade would bring these about.[1] Indeed, a principal selling point about cap-and-trade is its ability to engage a wide range of emissions-abatement efforts without direct promotion by regulators. On the other hand, if cap-and-trade is not

1 This is not to say that cap and trade must displace direct regulation. As emphasized in the MAC report, cap and trade is like an umbrella: both price-induced changes in behavior as well as direct regulation can be used to meet the cap. The present point is that the presence of cap and trade influences what additional policies are needed to bring about GHG reductions.

utilized, then it would be necessary to invoke additional policies to deal with the GHG emissions externality.

I interpret ETAAC's charge broadly -- to come up with a set of policies that would help California meet its AB32 targets. I believe it is within ETAAC's charge to consider whether cap and trade should be included as one of the potential tools to be applied. Chapter 8 does a good job weighing various design features in its review of the MAC report – but the ETAAC report doesn't directly consider whether cap and trade should be included and what policies beyond cap and trade are needed if cap and trade is in place. I would hope that the report would consider cap-and-trade directly in conjunction with other policies. (Indeed, I'd hope it would recommend cap and trade, given this policy's ability to engage a multitude of efforts in a cost-effective manner.) At any rate, what additional policies (whether using market mechanisms or direct regulation) are justified depends intimately on the presence/absence of cap and trade, and this should be recognized in the report.

More Specific Comments

Introduction

The intro and subsequent chapters tout job-creation as a potential benefit from the recommended policies. This has political advantages – but as a matter of economics it is either incorrect or requires qualification. New projects that demand labor input usually pull labor away from other potential uses – this is a cost (an opportunity cost), not a benefit. The exception is when the new projects provide jobs for unemployed workers. The report should qualify its discussion of benefits from job-creation. Much depends on the state of the labor market for workers with the relevant skill set.

Chapter 2 – Financial Sector

This chapter might need a different title. It really seems to be about financial *instruments* that apply to many of the economic sectors. For example, the Carbon Trust would apply to several sectors, and the feebate program would apply to transportation and possibly other sectors as well.

The Climate Trust is an interesting idea. I like the effort to jump-start the process by providing some price signals prior to 2012.

Some comments on the four stated purposes:

1. achieving GHG reductions outside the AB32 cap.

I think this should read "GHG reductions outside *the cap of a cap-and-trade system*." The "AB32 cap" is the state's overall emissions target and does not pertain to any particular emissions source.

Also, I agree that this is a useful purpose, subject to the need for additionality and verifiability (difficult criteria to enforce!)

2. further environmental justice goals

   A very useful purpose

3. serve as a market maker and price stabilizer

   I have some trouble with this.

   First, I'm not clear as to what is meant here. What market is the Trust making? Clearly the Trust wouldn't be needed to establish a cap and trade system.

   Second, I have some difficulties with the Trust as a price stabilizer. There are two issues here – (a) enforcing a price ceiling and (b) reducing price fluctuations. Regarding the price ceiling issue: I think that enforcing a price ceiling is a good idea, but I don't think the Trust is the best mechanism for doing this. The Trust would only be able to enforce a price ceiling to the extent that it can introduce additional allowances into the cap and trade market. However, its own supply of allowances would depend on how many it bought up previously or was originally issued. A safety valve is a more effective mechanism for enforcing a price ceiling (or preventing significant price increases), because there are no constraints on the amounts of allowances it might supply. Under a safety valve, the regulator is authorized to issue as many new allowances as are necessary to prevent the price increase.

   On the second issue -- price stabilization -- I think further efforts to stabilize prices (beyond enforcing a ceiling and perhaps a floor) are a mistake. Interfering with the market in this particular way can create additional uncertainty and disruption. It is likely to be highly subjective and can reduce investor confidence.

4. encourage RD&D

   This is a useful purpose. However, some questions arise. Why is it better to subsidize University research and demonstration projects out of a Carbon Trust, as opposed to from funds from the general Treasury? Perhaps there's a political advantage. Also, would subsidies for such projects be limited to funds available in the Trust? Or would ETAAC support additional subsidies coming from funds from the general Treasury?

Chapter 3 – Transportation Sector

The discussion in this chapter is excellent. As suggested by the general comments, it would help to bring out the efficiency rationales for the various policies. By referring to the market failures that the policies would address, the report could make clearer which policies can produce social net benefits (efficiency gains). I am a bit worried by the sheer number of policies recommended – the possibility of overlapping and possibly conflicting impacts. Also, I would recommend paying close attention to which policies continue to be needed if a cap and trade system is introduced and that system covers transportation.

Chapters 4-7 – Industry, Energy, Agriculture, and Forestry

Good discussion in each of these chapters. However, I believe my general comments apply. What is the efficiency rationale for renewable energy zones, for example?

I especially appreciate the effort to deal with the agriculture and forestry sectors. The report shows attention to many important institutional and technological details. It's impressive how much the Committee was able to put together in a relatively short period of time.

Chapter 8 – Comments on the MAC Report

As with the rest of the report, the discussion is clear and sets a good tone. As a member of the MAC I obviously agree with ETAAC when it endorses the MAC recommendations!

Here are some comments or suggestions for clarification:

-- The chapter implicitly endorses the use cap and trade as part of the AB32 effort. I believe ETAAC's charge is to consider whatever policies can help bring about technological substitutions and technological change to meet the AB32 targets. For this reason I would hope that ETAAC's report (1) include language supporting the use of cap and trade as part of California's effort, and (2) consider the place of other policies in a setting where cap and trade is one of the policies. As mentioned above, item 2 is very important since cap and trade can trigger some of the efforts that otherwise would require additional publicly provided incentives.

-- Allowance allocation. It is important to distinguish clearly grandfathering from free allocation. This is just a matter of clarification – the paragraph on early action on page 8-3 could give readers the impression that free allocation discourages early action, when it's really grandfathering – a special case of free allocation – that does this. Later paragraphs make the distinction clear, but it might help to provide the distinction earlier.

I'm not convinced that auctioning provides clearer price signals than free allocation. Prices are always determined by the latest trades. As long as there is *some* trading after free

allocation, a clear market price is established. It isn't necessary for all allowances to be traded.

-- Excellent discussion of use of auction revenues, offsets, and banking/borrowing

-- Cost-Containment mechanisms

I agree that a cost-containment mechanism is important. AB32 already gives the Governor the option of introducing a circuit-breaker – halting the market – if prices get unacceptably high. The question is whether it's better to have a cost-containment mechanism included within the policies implemented. I think it is.

However, I disagree with the report's endorsement of the Carbon Trust as a "market maker" in place of a safety valve. As indicated above, the Trust would be limited in its ability to enforce a price ceiling.

I believe there are some problems with this chapter's arguments against a safety valve:

The report states that a safety valve "would not create clear, stable prices." I disagree. The advantage of a safety valve is that it is clear to all market participants in advance what the ceiling price will be. (The announced price ceiling could in fact be a profile of ceiling prices, changing over time.) This provides clarity to investors. In contrast, the proposed use of the Trust as a market stabilizer leaves much uncertain and in fact could cause price instability.

The report also states that a safety valve would frustrate innovation by setting an upper limit on the cost of reductions. Certainly the incentive for innovation is increased to the extent that emissions abatement costs rise. But the goal of cap and trade (with or without the safety valve) is not to maximize innovation – if it were, then the cap should be set close to zero and there should be no cost-containment – this would allowance prices to skyrocket, thus maximizing innovation. The purpose of the safety valve is to control costs to facilities that generate GHG emissions, not stimulate innovation. Other policies – those brought out in other chapters – should be invoked to stimulated innovation. The appropriability problem and other market failures justify these other policies, which are needed in addition to a price on GHGs.