

Michael Carnall, Ph.D

January 9, 2010  
Economic and Allocation Advisory Committee  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Re: Recommendations to the California Air Resources Board From the Economic and Allocation Advisory Committee, Draft January 2, 2010.

Dear Members of the Economic and Allocation Advisory Committee:

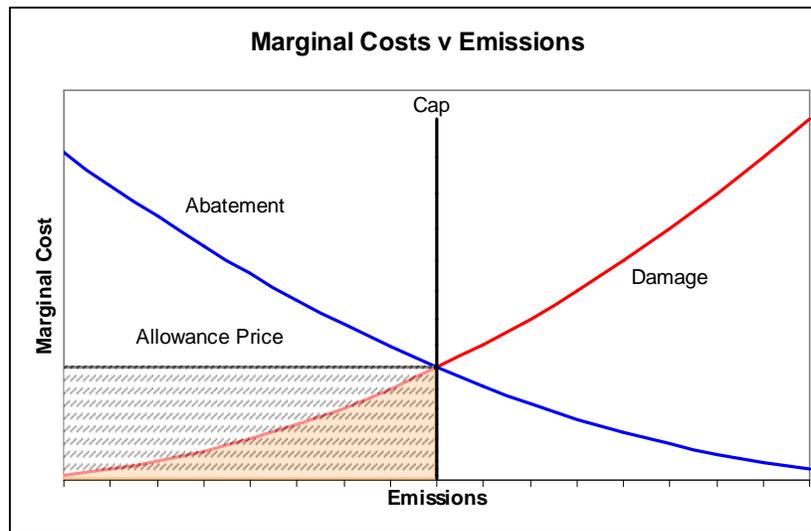
The implementation of the Cap-and-Trade program mandated by AB 32 while minimizing disruption to the economy is a daunting task. The Committee's recommendations provide a comprehensive set of guidelines for implementation while mitigating the most serious short-term effects on the economy. However, in focusing on implementation issues, these recommendations lose sight of the important fact that greenhouse gas (GHG) emissions will continue and that the ultimate first priority for use of the allowance value generated by the program must be mitigation of, or compensation for, damage resulting from those continued emissions.

The motivation for a pollution tax or cap-and-trade program is to elicit efficient abatement of a pollutant that gives rise to costs not born by the polluter, that is, to correct an externality. The standard theory is that to achieve economic efficiency, the tax, or cap, should be set at the level at which the marginal damage from emission is equal to the marginal cost of abatement, as depicted in Figure A.<sup>1</sup> When set at that level, abatement of emissions above the level of the cap is cheaper than paying the tax or purchasing appropriate allowances; therefore, emissions beyond the cap are abated.

However, it is important to recognize that even when the cap is set at the efficient level, not all emissions are abated, and thus, not all damage is eliminated. Below the level of the cap, it is less costly to pay the tax or purchase allowances than to abate emissions. The tax or allowance value is therefore paid on unabated emissions, and those damaged by the continued pollution can be compensated from the payments made by emitters to cover their tax obligation or for purchase of allowances.

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<sup>1</sup> Figure A is similar to Figure 1 on page 19 of the Committee's January 2, 2010 draft with the addition of the marginal damage curve.



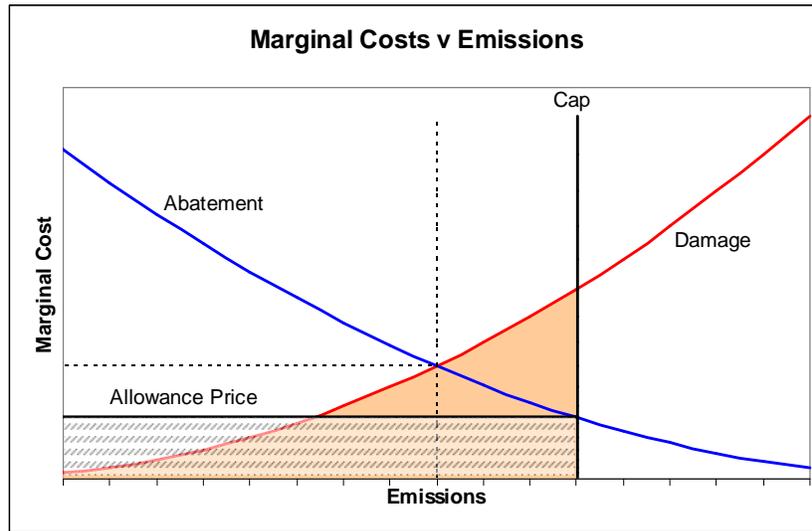
**Figure A**

The total allowance value is represented in Figure A by the hatched area under the Allowance Price and to the left of the Cap. The total damage is represented by the shaded area under the Damage curve to the left of the Cap. In this case the allowance value is clearly in excess of the damage from ongoing emissions and a portion of the total allowance value is available to mitigate the effects of the program.

The potential damages resulting from GHG emissions are external to the emitter, resulting in inefficient levels of emission. The motivation for the proposed cap-and-trade program is to correct this externality by eliciting a more economically efficient level of emissions. Arguably, it will not eliminate all GHG emissions nor will it eliminate all damage from continuing emissions. Therefore, the ultimate first priority for use of the proceeds of the program, the value of allowances, should be as compensation for, or mitigation of, damage resulting from continuing GHG emissions

In the case of GHG emissions, the situation is complicated by the fact that neither the trajectory of abatement cost nor the trajectory of damage from GHG emissions is well-known. No one has represented the level of the proposed cap as an efficient abatement level. It is simply a somewhat arbitrary level set by a political process and likely to be above the efficient abatement level. At levels above the efficient level the marginal cost of abatement is less than the marginal damage, as illustrated in Figure B. With the Cap set above the efficient level, the Allowance Price and total allowance value are lower than optimal, and the total damage is greater.<sup>2</sup> Where the Cap is higher than the efficient level, it is no longer clear that the total allowance value will be greater than the damage from ongoing emissions. If the total allowance value is equal to or less than the total damage from ongoing emissions, any use of the allowance value for purposes other than mitigation or compensation for damages should be recognized as a loan that must at some point be repaid.

<sup>2</sup> Total allowance value is not unambiguously lower. If the slope of the Abatement curve is very low, total allowance value could increase.



**Figure B**

In the Committee’s January 2, 2010 draft, the use of allowance value to compensate or mitigate damage from ongoing GHG emissions is included as a potential use. However, it seems to be subordinated to providing compensation for the costs and other effects of requiring partial *abatement* rather than compensation for, or mitigation of, the effects of ongoing emissions.<sup>3</sup>

It is reasonable that the use of allocation value must initially focus on mitigating the short-term economic effects of the program. However, it is also important that the short-term nature of that focus be clearly recognized and the expectation established that at some point much of the allocation value must be devoted to compensation for, or mitigation of, damage related to ongoing emissions of GHGs.

Sincerely,

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The opinions expressed herein are my own and do not necessarily represent the opinions of LECG LLC or any of its other employees or affiliates.

<sup>3</sup> Recommendations 9 states that “[t]he Committee recommends that ARB devote a significant share of allowance value toward financing of public and private investments. The investments to consider include those oriented toward achieving low-cost emissions reductions, job training, improvements to disadvantaged communities, *adaptation to climate impacts, and environmental remediation*” (emphasis added), January 2, 2010 draft. See also Recommendation 13 that provides recommendations for the proportion of allowance value to be used for various purposes.