

Commentary for AB 32 Scoping Plan, Program Design Technical Stakeholder Working Group meeting of April 25, 2008, on the subject of Cost Containment in a Greenhouse Gas Cap-and-Trade System<sup>1</sup>

Copy to Governor Schwarzenegger

Submitted by Ken Johnson, unaffiliated

My comments will first discuss the merits of three regulatory instruments relating to cost containment: banking, a price floor, and a Governor-administered safety valve. This will be followed by a discussion of the legislative policy underlying my perspectives and recommendations.

### Banking

The fundamental purpose of banking is to allow regulated entities to use unneeded allowances as a hedge against market price spikes and volatility. In practice banking is also used as a hedge against price increases due to increased stringency of future regulations. In this second use, emission allowances purchased at low cost are traded for more expensive allowances in the future, effectively circumventing and undermining the stringency of future regulations. For example, the 2005 Clean Air Interstate Rule (CAIR), which supersedes earlier Acid Rain regulations under the 1990 Clean Air Act amendments, establishes a two-phase cap for SO<sub>2</sub>, culminating in 2.5 million tons in eastern states in 2015. However, due to early reductions and banking of credits for use in later years, the SO<sub>2</sub> cap is unlikely to be met until well beyond 2015.<sup>2</sup>

In the context of AB 32 banking could have a similar effect of undermining post-2020 regulations, which will need to achieve substantial carbon neutrality in the California economy by mid-century. Banked allowances could have the effect of stalling further progress on emission reductions at the very time when reductions should be accelerating.

Banking is a very inefficient cost containment mechanism because regulated entities cannot predict the future and cannot know in advance whether they will need banked allowances, or in what amount, to mitigate price spikes and volatility. They would need to purchase allowances significantly in excess of their needs as a hedge against future market volatility, and regulators would need to allocate sufficient allowances to both cover regulated entities' near-term needs and also accommodate banking. If price spikes do not materialize, the banked allowances will eventually be used anyway, even though they are not needed. Thus banking would undermine the environmental integrity of the regulatory system.

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<sup>1</sup> [<http://www.arb.ca.gov/cc/scopingplan/pgmdesign-sp/meetings/meetings.htm>]

<sup>2</sup> 50 Dirtiest U.S. Power Plants: CO<sub>2</sub> Pollution Linked to Global Warming on Track to Rise by a Third, Mixed Picture on Other Key Pollutants (2007), by Ilan Levin, Environmental Integrity Project [<http://environmentalintegrity.org/pub457.cfm>]

A more sensible regulatory approach, which would be more effective at both reducing emissions and preserving market stability, would be to (1) avoid allowance over-allocation in excess of regulated firms' near-term needs, and (2) release additional allowances only if and when they are needed, and only in the amount needed, to mitigate market volatility. The first objective can be achieved with a price floor, and the second can be achieved with a safety valve (price cap). The safety valve would be administered by the Governor in accordance with his statutory authority and responsibilities under AB 32.

### Price floor

Both banking and a price floor would have a similar short-term effect of raising emission prices and reducing emissions below the cap requirement. The over-compliance would be consistent with and supportive of the AB 32 maximum-reduction mandate (requiring "the maximum technologically feasible and cost-effective greenhouse gas emission reductions"). However the short-term gains with banking would be offset and neutralized by long-term price reductions and emission increases, whereas the price floor's unsold allowances would be retired and would represent permanent, additional emission reductions beyond what would be achieved without the price floor. (For example, the early SO<sub>2</sub> reductions in the Acid Rain program could have been achieved without undermining CAIR if a price floor had been used in lieu of banking. A price floor might have even obviated the need for CAIR.) The price floor's trigger price would be under direct regulatory control and could be set according to a cost-effectiveness criterion.

A price floor creates a disincentive for regulated entities to acquire more allowances than they need, and operates to reduce the number of unused allowances in circulation. Banking does the opposite: It incentivizes entities to acquire more allowances than they need, and increases the number of unused allowances in circulation. These two regulatory instruments are incompatible and should not be used conjunctively.

A price floor creates incentives for over-compliance and early action in advance of declining caps, which could substantially reduce future compliance costs. Thus, from a long-term perspective a price floor can represent an effective cost reduction mechanism, provided that allowances are allocated in a way that maximizes marginal incentives for low-emission technology and infrastructure development while minimizing regulatory costs.

The April 25 presentation made mention of a price floor (page 14), and suggested an implementation mechanism: "State purchases allowances at a preset low price." The purchase would presumably be financed with auction revenue. But a more direct and straightforward implementation approach would be to simply impose a limit price on the auction and disburse all auction revenue.

Auctioning is commonly perceived as imposing higher regulatory costs than free allocation, but this is a misconception. If auction revenue is distributed in the same way as free allowance allocation, then the two approaches would be equivalent in terms of regulatory costs, and any policy rationale for or against a particular free allocation method will generally be equally applicable to auction revenue allocation. As indicated by ARB staff in the March 17 Program Design meeting, free allocation would have no identifiable advantage over an auction that uses the same proportionate allocation formula.

If the regulatory system uses some free allocation in combination with auctioning, then entities that are entitled to free allocation would receive a greater allowance share when the price floor is invoked. This can be illustrated by example: Suppose that a total of 1000 allowances are distributed, all by free allocation, and that firm X receives 10 allowances. The value of the 10 allowances will depend on the market price, but the firm will receive a 1% share of the total distribution value irrespective of the price. If the allowances are all auctioned (with or without a price floor) according to the same proportionate allocation formula, then firm X would need to purchase all of its needed allowances, but it will again receive 1% of the total allowance value as a cash distribution from auction revenue, so the auction will be equivalent to free allocation in terms of distributional costs.

Now suppose that only some of the 1000 allowances are freely allocated, with firm X again receiving a free distribution of 10 allowances. If a price floor is imposed and 500 allowances remain unsold, this would indicate that the market only needs half of the available 1000 allowances to achieve cost-effective emission reductions, and if firm X has typical emission performance it will only require 5 allowances, again a 1% allocation. But its free allocation is fixed at 10 allowances, irrespective of its actual requirements, so it now receives 2% of the total 500-allowance distribution. With the price floor imposed, its allowance share is doubled.

Free allocation is incompatible with a price floor because a price floor functions to dynamically limit the number of distributed allowances based on the market's actual needs, whereas free allocation predetermines entities' allowances in advance based on cost-conservative, long-range projections of future requirements. Mixing both approaches would result in disparities of the type illustrated above.

### Safety valve

A safety valve would make emission allowances in excess of the cap limit available at a predetermined ceiling price. AB 32 includes a kind of implicit safety valve, in that the statute gives the Governor authority to suspend the regulations under the "threat of significant economic harm". An explicit safety valve that is additional to, or duplicative of, the Governor's statutory authority would be unneeded. It would also be unauthorized and unlawful under AB 32 because the statute requires that "The statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or

repealed”, and with the exception of the Governor’s intervention authority there is no exception to this requirement.

Under AB 32 a safety valve could only be employed by the Governor, and at the Governor’s discretion, as a mechanism for exercising his intervention authority in the event that the regulations need to be suspended. The safety valve would not supersede or limit the Governor’s authority; it would only provide him a regulatory option for maintaining economic viability of the regulations in a manner that has minimal adverse impact on environmental goals.

A primary advantage of a safety valve is that by imposing a limit, with certainty, on emission prices, it becomes feasible to set sectoral caps closer to the threshold of cost effectiveness. This is in contrast to banking, which provides no guarantee that banked allowances will be sufficient to keep emission prices within economically viable limits, and which requires substantial over-allocation to minimize the possibility of unacceptable price spikes. However, under AB 32 the safety valve’s advantage of “cost certainty” would not be realized unless the Governor establishes a clear policy defining how, and under what circumstances, he would exercise his intervention authority. The Governor could help facilitate the regulatory process and maintain market stability by establishing such a policy.

Whether or not a safety valve is used, the Governor’s intervention authority will undermine banking because regulated entities will be disinclined to invest in banked allowances when there is an expectation that the Governor will intervene to limit any economically disruptive impacts of the regulations. Thus, banking is incompatible with a safety valve, including the implicit safety valve in AB 32, and the statute itself precludes the use of banking as an effective cost containment mechanism. By contrast, there would be no such incompatibility between a safety valve and a price floor – both could be used concurrently.

If a safety valve is not employed, then consideration should be given to how the Governor can exercise his intervention authority while keeping the regulatory system intact. The statute authorizes the Governor to “adjust the applicable deadlines for individual regulations, or for the state in the aggregate, to the earliest feasible date after that deadline”, and there must be some mechanism to bring regulated industries into compliance with the regulations by that “feasible date”. In view of his statutory responsibilities under AB 32, the Governor should be actively involved with ARB in the AB 32 planning process and in addressing this issue.

### Legislative policy

Two fundamental questions should be addressed in evaluating cap-and-trade policy options for AB 32: (1) What should be done if emission prices exceed \$1000/ton? (2) What should be done if prices fall to \$1/ton?

From the perspective of cap-and-trade dogmatists, the answer to the first question is “Nothing”, because any mechanism that relaxes the regulations will compromise their “environmental certainty”. A cap-and-trade system tries to minimize compliance costs, but does not impose any upper limit on costs. This perspective is supported by Part 3 of AB 32, which establishes the 2020 cap unconditionally and gives ARB no authority to amend or repeal the cap under any circumstances.

The dogmatic answer to the second question is also “Nothing” because a \$1/ton emission price would merely indicate that the system is effectively performing its cost minimization function, and any requirement or incentive for emission reductions beyond the minimal cap requirement will increase costs. Support for this perspective might be found in Sec. 38562(b)(1) of AB 32, which requires ARB to “Design the regulations ... in a manner that is equitable, *seeks to minimize costs* and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions” (emphasis added).

Both responses are inconsistent with AB 32 and are fundamentally irrational. Firstly, regulations that impose costs of \$1000/ton would be infeasible and unenforceable under any foreseeable circumstances, and AB 32 explicitly forfeits any guarantee of environmental certainty by authorizing the Governor to suspend the regulations (Sec. 38599). Without this provision, or some similar cost containment mechanism, AB 32 would not have been politically viable or would have had much weaker environmental goals. Absolute “environmental certainty” is not a viable basis for effective GHG regulation.

Secondly, AB 32 only establishes the 2020 cap as a limit (specifically, the “maximum allowable level of statewide greenhouse gas emissions”, Sec. 38505(n)), and not as a “target”. It further stipulates, as a separate statutory requirement additional to the cap requirement, that the regulations should achieve “the maximum technologically feasible and cost-effective greenhouse gas emission reductions” (Sec. 38560). An emission price of \$1/ton would clearly indicate that the regulations do not comply with this requirement, regardless of whether the cap is achieved.

The greater short-term costs of over-compliance pursuant to Sec. 38560 could be dwarfed by the avoided long-term costs of a very rapid and precipitous reduction in GHG emissions that may be required without early action. Thus, when the costs of post-2020 regulations (Sec. 38551) are taken into consideration, incentives for over-compliance can induce early action and reduce long-term costs pursuant to Sec. 38562(b)(1). Moreover, there is no guarantee that attainment of the 2020 cap will make it possible, at any cost, to avert catastrophic climate change, so any reasonable options for further reducing emissions below the 2020 limit should be pursued.

The most recent climate science<sup>3</sup> strengthens the policy rationale for supplementing the AB 32 cap with the maximum-reduction mandate. Caps alone have limited utility for addressing climate change because it is not possible to mandate caps at sustainable emission levels, and because caps are generally premised on predictive assumptions that are uncertain and biased toward cost conservatism. Supplementary incentive-type policies (such as a price floor) can potentially motivate further emission reductions beyond the minimal cap requirement, but within limitations of feasibility and cost-effectiveness in accordance with the maximum-reduction mandate. Such policies could provide a smooth transition to post-2020 regulations that will require accelerated emission reductions toward substantial carbon neutrality by mid-century.

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<sup>3</sup> Hansen, J., Mki. Sato, P. Kharecha, D. Beerling, V. Masson-Delmotte, M. Pagani, M. Raymo, D. Royer, and J.C. Zachos, 2008: Target atmospheric CO<sub>2</sub>: Where should humanity aim? *Science*, submitted, April 2008. [<http://arxiv.org/abs/0804.1126>]