

# **Issues Analysis<sup>1</sup>: Auction Format and Auction Frequency for California's Greenhouse Gas Emissions Cap-and-Trade Market**

**by**

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In this paper we discuss potential changes to the allowance auctions held by the Air Resources Board (ARB). We recommend that the ARB run two-sided auctions at least once per quarter, more frequently if possible, in order to provide transparent and timely allowance price information to market participants and the ARB. In related papers we discuss the benefits of firms having more opportunities to transact anonymously on liquid markets. These benefits apply to both buyers and sellers of allowances, and should help mitigate concerns over the release of information of allowance balances. Increasing the frequency of the auctions should significantly improve the credibility of the allowance price information available to market participants and the ARB.

We believe that there are significant benefits to market participants from the ARB running more frequent anonymous auctions for allowances. These auctions are currently used by the ARB to sell each new vintage of allowances. Extending the auction design to allow additional sellers besides those designated by the ARB to consign their allocations to these auctions should enhance liquidity in the auctions.

A two-sided auction allows both sides of the market—sellers of allowances and buyers of allowances—to submit offer and bid curves which they are willing to sell and purchase allowances, respectively. The current auction design only has a single seller of allowances—the ARB. However, there are likely to be many existing owners of allowances that would like the opportunity to sell them at an attractive price through an anonymous market. For example, the California Public Utilities Commission (CPUC) could allow the electric and natural gas utilities that they regulate to buy or sell allowances through these auctions. Without an anonymous two-sided auction the CPUC would not know whether these utilities were buying or selling their allowances at reasonable prices.

A two-sided auction design could be easily implemented by allowing all market participants to submit increasing willingness-to-supply curves and decreasing willingness-to-purchase curves for allowances of the same vintage. The market-clearing price for each vintage could be determined as the price at the point of intersection of the aggregate supply curve with the aggregate demand curve. Each market participant's net sales would equal the quantity from its willingness-to-supply curve at or below the market-clearing price minus the quantity on its

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<sup>1</sup> The Emissions Market Assessment Committee (EMAC) was formed to provide independent analysis and advice to the California Air Resources Board (ARB) and staff on implementation of California's greenhouse gas (GHG) cap-and-trade (C&T) market. Two areas of current concern for the EMAC are the format used by the ARB to auction allowances and the frequency that these auctions are held

willingness-to-demand curve at or above the market-clearing price. The fact all market participants can buy and sell allowances in these auctions increases the liquidity of the market and credibility of the resulting market-clearing price.

There are a number of benefits to more frequent auctions. First, although the ARB currently compiles information on all allowance transfers, for complicated contracts it is extremely difficult for the ARB to obtain credible allowance price information from the information compiled. Moreover, it is relatively straightforward for a buyer or seller to render any price information compiled from a bilateral transaction of little use to ARB by bundling the transaction with some other purchase or sale. For example, a buyer and seller might agree to some combination of sales of allowances bundled with other goods or services. For these allowance transfers, the market participant has considerable discretion in what to report as the transactions price.

These problems do not arise in the case of trades through an anonymous two-sided auction market because a standardized product is being traded at a uniform price set through a set transparent pricing mechanism. Consequently, prices set through the two-sided auction mechanism provide credible price information about allowances that can be compared over time. For this reason, there are significant regulatory and market-efficiency benefits for the ARB to run these auctions with at least a quarterly frequency. Purchasing and selling allowances through this mechanism also ensures that small market participants will receive or pay the same price for allowances as larger market participants.

With more periodic two-side auctions, small or infrequent market participants can simply participate as price takers and be assured that they will receive the same price a large buyer or seller. The existence of the anonymous centralized market allows smaller market participants to avoid paying to gather the information needed to learn what the market price of allowances is at any point in time. Instead, they only need to submit their bids or offers into the short-term market and they will learn what the market-clearing price is for allowances at the conclusion of the auction.