

California Air Resources Board Quarterly Auction 2, February 2013

Summary Results Report

June 5, 2013 Update

Background

The Air Resources Board (ARB) held its second auction of greenhouse gas allowances (GHG) on February 19, 2013. The auction included a Current Auction of 2013 vintage allowances and an Advance Auction of 2016 vintage allowances.

Prior to the certification of the auction, ARB staff and the Market Monitor carefully evaluated the bids, and determined that the auction process and procedures complied with the requirements of the Cap-and-Trade Regulation. As provided below, the Market Monitor made the following determination:

“The Market Monitor found that the auction was cleared consistent with the auction clearing rules in the regulation and appropriate economic logic. The Market Monitor confirmed the auction results, based on the data available. The Market Monitor confirmed the clearing price and clearing quantities by participant for the auction for 2013 and for the auction for 2016 vintage allowances. The Auction Administrator reported that the 2013 auction clearing price is \$13.62 per allowance, with 12,924,822 total 2013 allowances sold. The Auction Administrator reported that the 2016 auction clearing price is \$10.71 per allowance with 4,440,000 total 2016 allowances sold. The Market Monitor confirmed that the 2013 auction clearing price is \$13.62 per allowance and that the 2016 auction clearing price is \$10.71 per allowance. The Market Monitor confirmed the cleared quantities assigned to individual participants by the Auction Administrator were consistent with the regulation logic involving tie breakers and the random allocation of residual allowances in both auctions and therefore that the total volumes cleared are correct. The auction algorithm correctly applied the regulation requirements covering the bid guarantee and the tie breaker constraints. The Market Monitor did not observe any breaches of security or communication protocols. The Market Monitor recommends that ARB approve the February Auction results.”

In the Current Auction of 2013 allowances, there were no violations of the holding limits, purchase limits, or bid guarantee for any Submitted Bids at or above the settlement price. For bids below the settlement price, bids for 287 lots (287,000 allowances) would have been rejected for exceeding the bid guarantee if the auction had settled at the Auction Reserve Price. The bids rejected for violating the bid guarantee were not included in the calculation of the statistics reported for “Qualified Bids.” All of the rejected bids were below the settlement price, and consequently had no impact on the determination of the settlement price. No bids were rejected in the Advance Auction of 2016 vintage allowances.

California Air Resources Board Quarterly Auction 2, February 2013

The Air Resources Board (ARB) held its second auction of greenhouse gas allowances (GHG) on February 19, 2013. The auction included a Current Auction of 2013 vintage allowances and an Advance Auction of 2016 vintage allowances. Below are key data and information on the results of the auction. Please see Explanatory Notes after the list of Qualified Bidders for descriptions of all summary information.

Qualified Bid Summary Statistics

Current Auction of 2013 Vintage Allowances

Total 2013 Allowances Available for Sale:	12,924,822
Total IOU Consigned 2013 Allowances:	9,625,460 (\$131,098,765)
Total POU Consigned 2013 Allowances:	628,940 (\$8,566,163)
Total State-Owned 2013 Allowances:	2,670,422 (\$36,371,148)
Total 2013 Allowances Sold at Auction:	12,924,822 (\$176,036,076)
Total Qualified Bids Divided by	
Total 2013 Allowances Available for Sale:	2.47
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$13.62
Allowances Purchased by Compliance Entities:	88.15%
Bid Price Summary Statistics	
Maximum Price:	\$50.01
Minimum Price:	\$10.71
Mean Price:	\$14.71
Median <u>Bid</u> Price:	\$12.56
<u>Median Allowance Price:</u>	<u>\$12.91</u>
Hirschman-Herfindahl index:	728

Advance Auction of 2016 Vintage Allowances

Total 2016 Allowances Available for Sale:	9,560,000
Total 2016 Allowances Sold at Auction:	4,440,000 (\$47,552,400)
Total Qualified Bids Divided by	
Total 2016 Allowances Available for Sale:	0.46
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$10.71
Allowances Purchased by Compliance Entities:	100%
Bid Price Summary Statistics	
Maximum Price:	\$40.00
Minimum Price:	\$10.71
Mean Price:	\$12.40
Median <u>Bid</u> Price:	\$11.12
<u>Median Allowance Price:</u>	<u>\$11.10</u>
Hirschman-Herfindahl index:	3159

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California Air Resources Board Quarterly Auction 2, February 2013

Submitted Bid Summary Statistics

Current Auction of 2013 Vintage Allowances

Total 2013 Allowances Available for Sale:	12,924,822
Total IOU Consigned 2013 Allowances:	9,625,460 (\$131,098,765)
Total POU Consigned 2013 Allowances:	628,940 (\$8,566,163)
Total State-Owned 2013 Allowances:	2,670,422 (\$36,371,148)
Total 2013 Allowances Sold at Auction:	12,924,822 (\$176,036,076)
Total Submitted Bids Divided by	
Total 2013 Allowances Available for Sale:	2.49
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$13.62
Allowances Purchased by Compliance Entities:	88.15%
Bid Price Summary Statistics	
Maximum Price:	\$50.01
Minimum Price:	\$10.71
Mean Price:	\$14.68
Median <u>Bid</u> Price:	\$12.56
<u>Median Allowance Price:</u>	<u>\$12.81</u>
Herfindahl–Hirschman Index :	728

Advance Auction of 2016 Vintage Allowances

Total 2016 Allowances Available for Sale:	9,560,000
Total 2016 Allowances Sold at Auction:	4,440,000 (\$47,552,400)
Total Submitted Bids Divided by	
Total 2016 Allowances Available for Sale:	0.46
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$10.71
Allowances Purchased by Compliance Entities:	100%
Bid Price Summary Statistics	
Maximum Price:	\$40.00
Minimum Price:	\$10.71
Mean Price:	\$12.40
Median <u>Bid</u> Price:	\$11.12
<u>Median Allowance Price:</u>	<u>\$11.10</u>
Herfindahl–Hirschman Index:	3159

List of Qualified Bidders for the Current Auction of 2013 Vintage Allowances and the Advance Auction of 2016 Vintage Allowances

A Qualified Bidder is an entity that registered for the auction, submitted an acceptable bid guarantee, and was approved by ARB to participate in the auction.

Aera Energy LLC
 Air Liquide Large Industries U.S. LP
 Berry Petroleum Company
 BNSF Railway Company
 BP Energy Company
 Brookfield Energy Marketing LP
 California Dairies Inc.
 California Department of Water Resources
 California Institute of Technology
 California Pacific Electric Company, LLC
 Calpine Energy Services, L.P.
 Cargill Power Markets, LLC
 Castleton Commodities Merchant Trading L.P.
 CE2 Carbon Capital LLC
 Chevron U.S.A. Inc.
 Citigroup Energy Inc.
 City of Riverside Public Utilities
 City of Vernon, Light and Power
 ClimeCo Corporation
 CP Energy Marketing (US) Inc.
 Crockett Cogeneration, A California Limited Partnership
 Del Monte Corporation
 DTE Energy Trading, Inc.
 Dynegy Moss Landing, LLC
 EDF Trading North America, LLC
 Element Markets, LLC
 Exxon Mobil Corporation
 Foster Poultry Farms
 GenOn Energy Management, LLC
 Gila River Power, LLC
 Goal Line LP
 High Desert Power Project, LLC
 Hilmar Cheese Company
 Indigo Generation, LLC
 Ingomar Packing Company, LLC

J. Aron & Company
 J. G. Boswell Company
 KES Kingsburg L.P.
 Kings River Conservation District
 Koch Supply & Trading, LP
 La Paloma Generating Company, LLC.
 Lockheed Martin Space Systems
 Los Angeles Department of Water & Power
 Luminus Energy Partners QP, LP
 Macquarie Energy LLC
 Mercuria Energy America, Inc.
 Mitsubishi Cement Corporation
 Modesto Irrigation District
 Morgan Stanley Capital Group Inc.
 Naftex Operating Company
 NextEra Energy Power Marketing LLC
 Noble Americas Gas & Power Corp.
 Northern California Power Agency
 NRG Power Marketing LLC
 Occidental Power Services, Inc.
 Oildale Energy LLC
 OLS Energy - Chino
 Pacific Gas and Electric Company
 PacifiCorp
 Pasadena Water & Power
 PE-Berkeley, Inc.
 Phillips 66 Company
 Pittsburg Power Company
 Plains Exploration & Production Company
 Plumas-Sierra Rural Electric Cooperative
 Portland General Electric Company
 Power and Water Resources Pooling Authority
 Redding Electric Utility
 Rio Tinto Minerals Inc.
 Ripon Cogeneration LLC.
 Royal Bank of Canada
 Sacramento Municipal Utility District (SMUD)
 San Diego Gas & Electric Company
 Sempra Generation
 Sensient Dehydrated Flavors LLC
 Shell Energy North America (US), L.P.
 Silicon Valley Power (SVP), City of Santa Clara
 Southern California Edison Company

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Stanislaus Food Products Company
Tenaska Power Services, Co.
Tesoro Refining & Marketing Company LLC
The Bank of Nova Scotia
The Dow Chemical Company
The Morning Star Packing Company
TransAlta Energy Marketing (U.S.) Inc.
Turlock Irrigation District
Twin Eagle Resource Management, LLC
USS-POSCO Industries
Vista Metals Corp
Vitol Inc.
Yuba City Cogeneration Partners, LP

Explanatory Notes: Qualified Bid Summary Statistics Current Auction of 2013 Vintage Allowances

Total 2013 Allowances Available for Sale:	Total 2013 vintage allowances available for purchase in the auction in metric tons, including allowances consigned by Electric Distribution Utilities and allowances sold by the State of California.
Total IOU 2013 Consigned Allowances:	The 2013 vintage allowances available for purchase in the auction in metric tons that were consigned by investor owned utilities.
Total POU 2013 Consigned Allowances:	The 2013 vintage allowances available for purchase in the auction in metric tons that were consigned by publicly owned utilities.
Total 2013 Allowances Sold at Auction:	Total 2013 vintage allowances purchased in the auction in metric tons.
Total Qualified Bids Divided by Total 2013 Allowances Available for Sale:	Total number of allowances included in all the qualified bids for the current vintage (regardless of bid price) divided by the total number of current vintage allowances available in the auction.
Auction Reserve Price:	The minimum acceptable auction bid price for current vintage allowances in dollars per metric ton.
Settlement Price Per Allowance:	The current vintage allowance price that resulted from the auction, in dollars per metric ton.
Allowances Won by Compliance Entities:	The total number of current vintage allowances purchased in the auction by compliance entities divided by the total number of current vintage allowances sold in the auction. A Compliance Entity is a Covered Entity or Opt-in Covered Entity as defined in the Cap-and-Trade Regulation.
Bid Price Summary Statistics	Statistics are calculated from all the qualified bids for the current vintage (regardless of bid price).
Maximum Price:	Highest qualified bid
Minimum Price:	Lowest qualified bid
Mean Price:	Average qualified bid calculated as the sum of the bid price times the bid quantity of each qualified bid divided

Median Bid Price:

by the sum of the bid quantities across all qualified bids.

The price per metric ton calculated so that 50% of the qualified bids fall above and below the median bid price.

Median Allowance Price:

The price per metric ton calculated so that 50% of the quantity of allowances in the qualified bids fall above and below that price ~~median value~~.

Herfindahl-Hirschman index (HHI):

The HHI is a measure of the concentration of allowances purchased by winning bidders relative to the total sale of current vintage allowances in the auction. The percentage of allowances purchased by each winning bidder is squared and then summed across all winning bidders. The HHI can range up to 10,000, representing 100% of the current vintage allowances purchased by a single bidder (i.e., $100 \times 100 = 10,000$).

Advance Auction of 2016 Vintage Allowances

The data for the future vintage allowance auction are computed in the same manner as computed for the current vintage allowance auction. No allowances are consigned to the future vintage auction.

Explanatory Notes: Submitted Bid Summary Statistics Current Auction of 2013 Vintage Allowances

Total 2013 Allowances Available for Sale:	Total 2013 vintage allowances available for purchase in the auction in metric tons, including allowances consigned by Electric Distribution Utilities and allowances sold by the State of California.
Total IOU 2013 Consigned Allowances:	The 2013 vintage allowances available for purchase in the auction in metric tons that were consigned by investor owned utilities.
Total POU 2013 Consigned Allowances:	The 2013 vintage allowances available for purchase in the auction in metric tons that were consigned by publicly owned utilities.
Total 2013 Allowances Sold at Auction:	Total 2013 vintage allowances purchased in the auction in metric tons.
Total Submitted Bids Divided by Total 2013 Allowances Available for Sale:	Total number of allowances included in all the submitted bids for the current vintage (regardless of bid price) divided by the total number of current vintage allowances available in the auction.
Auction Reserve Price:	The minimum acceptable auction bid price for current vintage allowances in dollars per metric ton.
Settlement Price Per Allowance:	The current vintage allowance price that resulted from the auction, in dollars per metric ton.
Allowances Won by Compliance Entities:	The total number of current vintage allowances purchased in the auction by compliance entities divided by the total number of current vintage allowances sold in the auction. A Compliance Entity is a Covered Entity or Opt-in Covered Entity as defined in the Cap-and-Trade Regulation.
Bid Price Summary Statistics	Statistics are calculated from all the submitted bids for the current vintage (regardless of bid price).
Maximum Price:	Highest submitted bid
Minimum Price:	Lowest submitted bid
Mean Price:	Average submitted bid calculated as the sum of the bid price times the bid quantity of each submitted bid divided by the sum of the bid quantities across all submitted bids.

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<u>Median Bid Price:</u>	<u>The price per metric ton calculated so that 50% of the submitted bids fall above and below the median bid price.</u>
Median <u>Allowance</u> Price:	The price per metric ton calculated so that 50% of the <u>quantity of</u> allowances in the submitted bids fall above and below that <u>price median value</u> .
Herfindahl–Hirschman Index (HHI):	The HHI is a measure of the concentration of allowances purchased by winning bidders relative to the total sale of current vintage allowances in the auction. The percentage of allowances purchased by each winning bidder is squared and then summed across all winning bidders. The HHI can range up to 10,000, representing 100% of the current vintage allowances purchased by a single bidder (i.e., $100 \times 100 = 10,000$).

Advance Auction of 2016 Vintage Allowances

The data for the future vintage allowance auction are computed in the same manner as computed for the current vintage allowance auction. No allowances are consigned to the future vintage auction.