

# California Air Resources Board Quarterly Auction 4, August 2013

## Summary Results Report

### Background

The Air Resources Board (ARB) held its fourth auction of greenhouse gas allowances on August 16, 2013. The auction included a Current Auction of 2013 vintage allowances and an Advance Auction of 2016 vintage allowances. The information provided in this report is a balance between the need for program transparency and protection of individual auction participant's market positions.

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 (AA) reported that the 2013 auction clearing price is \$12.22 per allowance, with 13,865,422 total 2013 allowances sold. The AA reported that the 2016 auction clearing price is \$11.10 per allowance with 9,560,000 total 2016 allowances sold. The Market Monitor confirmed that the 2013 auction clearing price is \$12.22 per allowance and that the 2016 auction clearing price is \$11.10 per allowance. The Market Monitor confirmed the cleared quantities assigned to individual participants by the AA 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 August 2013 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. No bids were rejected in the Advance Auction of 2016 vintage allowances.

## California Air Resources Board Quarterly Auction 4, August 2013

The Air Resources Board (ARB) held its fourth auction of greenhouse gas allowances (GHG) on August 16, 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:	13,865,422
Total IOU Consigned 2013 Allowances:	10,164,173 (\$124,206,194)
Total POU Consigned 2013 Allowances:	1,051,617 (\$12,850,760)
Total State-Owned 2013 Allowances:	2,649,632 (\$32,378,503)
Total 2013 Allowances Sold at Auction:	13,865,422 (\$169,435,457)
Total Qualified Bids Divided by	
Total 2013 Allowances Available for Sale:	1.62
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$12.22
Allowances Purchased by Compliance Entities:	95.5%
Bid Price Summary Statistics	
Maximum Price:	\$50.01
Minimum Price:	\$10.71
Mean Price:	\$15.35
Median Bid Price:	\$12.62
Median Allowance Price:	\$13.01
Hirschman-Herfindahl Index:	861

#### Advance Auction of 2016 Vintage Allowances

Total 2016 Allowances Available for Sale:	9,560,000
Total 2016 Allowances Sold at Auction:	9,560,000 (\$106,116,000)
Total Qualified Bids Divided by	
Total 2016 Allowances Available for Sale:	1.69
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$11.10
Allowances Purchased by Compliance Entities:	96.3%
Bid Price Summary Statistics	
Maximum Price:	\$30.00
Minimum Price:	\$10.71
Mean Price:	\$11.78
Median Bid Price:	\$10.95
Median Allowance Price:	\$11.10
Hirschman-Herfindahl Index:	1605

**California Air Resources Board Quarterly Auction 4, August 2013****Submitted Bid Summary Statistics****Current Auction of 2013 Vintage Allowances**

Total 2013 Allowances Available for Sale:	13,865,422
Total IOU Consigned 2013 Allowances:	10,164,173 (\$124,206,194)
Total POU Consigned 2013 Allowances:	1,051,617 (\$12,850,760)
Total State-Owned 2013 Allowances:	2,649,632 (\$32,378,503)
Total 2013 Allowances Sold at Auction:	13,865,422 (\$169,435,457)
Total Qualified Bids Divided by	
Total 2013 Allowances Available for Sale:	1.62
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$12.22
Allowances Purchased by Compliance Entities:	95.5%
Bid Price Summary Statistics	
Maximum Price:	\$50.01
Minimum Price:	\$10.71
Mean Price:	\$15.35
Median Bid Price:	\$12.62
Median Allowance Price:	\$13.01
Hirschman-Herfindahl Index:	861

**Advance Auction of 2016 Vintage Allowances**

Total 2016 Allowances Available for Sale:	9,560,000
Total 2016 Allowances Sold at Auction:	9,560,000 (\$106,116,000)
Total Qualified Bids Divided by	
Total 2016 Allowances Available for Sale:	1.69
Auction Reserve Price:	\$10.71
Settlement Price Per Allowance:	\$11.10
Allowances Purchased by Compliance Entities:	96.3%
Bid Price Summary Statistics	
Maximum Price:	\$30.00
Minimum Price:	\$10.71
Mean Price:	\$11.78
Median Bid Price:	\$10.95
Median Allowance Price:	\$11.10
Hirschman-Herfindahl Index:	1605

## 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  
AltaGas Power Holdings (U.S.) Inc.  
Arizona Electric Power Cooperative, Inc.  
Berry Petroleum Company  
BNSF RAILWAY COMPANY  
BP Energy Company  
California Dairies Inc.  
California Department of Water Resources  
California Pacific Electric Company, LLC  
California Power Holdings LLC  
Calpine Energy Services, L.P.  
CE2 Carbon Capital LLC  
Chevron U.S.A. Inc.  
Citigroup Energy Inc.  
City of Banning  
City of Colton  
City of Riverside Public Utilities  
City of Roseville  
City of Vernon, Light and Power  
CP Energy Marketing (US) Inc.  
CPV Sentinel, LLC  
DTE Energy Trading, Inc.  
Dynergy Moss Landing, LLC  
EDF Trading North America, LLC  
Exelon Generation Company, LLC  
Exxon Mobil Corporation  
GenOn Energy Management, LLC  
Gila River Power, LLC  
Guyton Durnin  
High Desert Power Project, LLC  
Indigo Generation, LLC  
J. Aron & Company  
J.P. Morgan Ventures Energy Corporation  
Kings River Conservation District  
Koch Supply & Trading, LP  
La Paloma Generating Company, LLC.

Los Angeles Department of Water & Power  
Luminus Energy Partners QP, LP  
Macquarie Energy LLC  
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  
Pacific Coast Energy Company LP  
Pacific Gas and Electric Company  
PacifiCorp  
Pasadena Water & Power  
Phillips 66 Company  
Portland General Electric Company  
Power and Water Resources Pooling Authority  
Redding Electric Utility  
Ripon Cogeneration LLC.  
Riverside Cement Company  
Royal Bank of Canada  
Sacramento Municipal Utility District (SMUD)  
San Diego Gas & Electric Company  
San Diego Gas & Electric Company – Moreno Compressor Station  
Sempra Generation  
Signal Hill Petroleum, Inc.  
Silicon Valley Power (SVP), City of Santa Clara  
Southern California Edison Company  
Southern California Gas Company  
Stanislaus Food Products Company  
Surprise Valley Electrification Corp.  
Tesoro Refining & Marketing Company LLC  
The Bank of Nova Scotia  
TransAlta Energy Marketing (U.S.) Inc.  
TransCanada Energy Sales Ltd.  
Ultramar, Inc.  
Union Pacific Railroad Company  
USS-POSCO Industries  
Valero Refining Company-California, Benicia Refinery and Asphalt Plant  
Vitol Inc.

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

Median Bid Price: 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.



Median Bid Price:	The price per metric ton calculated so that 50% of the submitted 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 submitted 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.