

Attachment B: Examples

Auction Notice
California Cap-and-Trade Program Greenhouse Gas Allowance Auction on
February 19, 2013
Issued on December 21, 2012

This attachment provides information and examples of how to determine the amount of your bid guarantee, how holding and purchase limits are applied, and examples of how auctions are settled.

I. Determining Your Bid Guarantee

Each row in Table 1 provides the Bid Value at each Bid Price.

ARB will sell Bid Lots of allowances representing a bundle of 1,000 allowances. Only during the tiebreaker process will ARB award less than a bundle of 1,000 allowances.

Table 1: Maximum Bid Value of Bidder's Bids

Entity Name	Bid Price	Bid Lots	Bid Number of Allowances	Cumulative Allowances	Bid Value at Each Bid Price
A	\$ 18.75	130	130,000	130,000	\$2,437,500
A	\$ 15.25	190	190,000	320,000	\$4,880,000
A	\$ 12.75	135	135,000	455,000	\$5,801,250
A	\$ 10.25	125	125,000	580,000	\$5,945,000
B	\$ 14.70	130	130,000	130,000	\$1,911,000
B	\$ 10.00	80	80,000	210,000	\$2,100,000
C	\$ 35.58	240	240,000	240,000	\$8,539,200
C	\$ 32.19	420	420,000	660,000	\$21,245,400
C	\$ 30.50	750	750,000	1,410,000	\$43,005,000
D	\$ 17.80	900	900,000	900,000	\$16,020,000
D	\$ 15.20	780	780,000	1,680,000	\$25,536,000
E	\$ 16.30	300	300,000	300,000	\$4,890,000
E	\$ 14.50	180	180,000	480,000	\$6,960,000
E	\$ 12.75	85	85,000	565,000	\$7,203,750
E	\$ 10.00	35	35,000	600,000	\$6,000,000

Bid Value = Cumulative Allowances * Bid Price

Cumulative Allowances = Sum of current Bid Number of Allowances and Bid Number of Allowances at each higher Bid Price

Bid Number of Allowances = Bid Lots * 1,000

When bidding in an auction, the Bid Price, Bid Lots, and Instrument Vintage are entered for each bid. The Cumulative Allowances shown in Table 1 would not be entered into the bid schedule. The Cumulative Allowances column indicates the total allowances that have been bid collectively for all bids submitted by Entity.

To determine the value of your total bid guarantee when there are multiple bids at different Bid Prices, the following process would apply:

Example 1: Calculating a Bid Guarantee When Submitting Multiple Bids

As shown in Table 1, Entity A has four different bids at four different Bid Prices.

- Bid Price of \$18.75: Entity A would win 130,000 allowances at a cost of \$2,437,500.
- Bid Price of \$15.25: Entity A would win 320,000 allowances at a cost of \$4,880,000. (320,000 allowances is the sum of 130,000 plus 190,000)
- Bid Price of \$12.75: Entity A would win 455,000 allowances at a cost of \$5,801,250. (455,000 allowances is the sum of 130,000 plus 190,000 plus 135,000)
- Bid Price of \$10.25: Entity A would win 580,000 allowances at a cost of \$5,945,000. (580,000 allowances is the sum of 130,000 plus 190,000 plus 135,000 plus 125,000)

Entity A's bid schedule shows that it is willing to purchase a total of 580,000 allowances at a price of \$10.25 for a total bid cost of \$5,945,000. **Entity A should submit a bid guarantee of at least \$5,945,000 if it wants to buy all allowances in its bid schedule.**

Using the same process for the bid schedules submitted by Entities B to E, the maximum total value of each entity's bid schedule is determined, highlighted in gray in Table 1 and shown above. Note that for Entity E, the highest value in the bid schedule is the third bid and that if the settlement price dropped to the reserve price, Entity E's total cost would fall relative to the third bid at \$12.75.

Based on this example, each entity's bid guarantee should be equal to or greater than the maximum total value for the planned bid schedule in Table 1. Entities bidding in an auction will be limited to incurring a total cost less than or equal to the dollar amount of bid guarantee submitted and should evaluate their bids against the bid guarantee they provided in the manner illustrated in this example.

The minimum bid guarantee bidders A to E should submit to avoid having their bid limited by the Auction Administrator would be as follows:

- Bidder A – \$5,945,000
- Bidder B – \$2,100,000
- Bidder C – \$43,005,000
- Bidder D – \$25,536,000
- Bidder E – \$7,203,750

II. Bid Guarantees for Current and Advance Auctions

Bidders submit a single bid guarantee that is used first for the Current Auction and any remainder of the bid guarantee after the Current Auction is applied to bids in the Advance Auction if the bidder submits bids for both auctions.

Example 2: Application of a Single Bid Guarantee to Current and Advance Auction

If Entity A in Table 1 submitted a bid guarantee of \$10,000,000 and the auction settlement price for the Current Auction is \$12.75 that would leave \$4,198,750 to be available for the Advance Auction.

$$\$10,000,000 - \$5,801,250 = \$4,198,750$$

III. Entity Bid Evaluation Procedures for Purchase Limits and Holding Limit

Example 2 demonstrates how bidders should evaluate their bids or bid schedule with respect to the bid guarantee. Example 3 and Example 4 illustrate how bidders should evaluate their bid schedules for the Current Auction purchase limits and holding limit.

A. Purchase Limits

The purchase limits for a Current Auction are 40 percent for electrical distribution utilities, 15 percent for other covered and opt-in entities, and 4 percent for voluntarily associated entities. The purchase limit percentages apply to the auction allowance supply.

Example 3: Determining Your Purchase Limit

For each category of entity, multiply your category's purchase limit by the total amount of allowances available for auction. Thus, for an electrical distribution utility:

$$\text{Total number of allowances for sale} = 3,900,000 \text{ allowances}$$

$$\text{Purchase Limit} = 3,900,000 * 0.40$$

$$\text{Purchase Limit} = 1,560,000 \text{ allowances}$$

B. Holding Limits

Holding limits are based on the following formula:

$$\text{Holding Limit} = 0.1 * \text{Base} + 0.025 * (\text{Annual Allowance Budget} - \text{Base})$$

Where:

“Base” equals 25 million metric tons of Carbon Dioxide equivalent (CO₂e)

“Annual Allowance Budget” is the number of allowances issued for the current budget year.

For 2013, the annual budget is 162,800,000 allowances.

$$\text{Holding Limit} = 0.1 * 25,000,000 + 0.025 * (162,800,000 - 25,000,000)$$

$$2013 \text{ Holding Limit} = 5,945,000 \text{ allowances}$$

Maximum Number of Allowances an Entity Can Hold

The holding limit is the maximum number of allowances an entity may have in its holding account. It is calculated by a formula in section 95920(b) for current vintage allowances and in section 95920(e) for allowances purchased at Advance Auctions. The calculations are based on annual allowance budgets, so the holding limit changes for each vintage year.

A covered entity may exempt a limited number of allowances from the holding limit calculation by transferring them to a compliance account. This “limited exemption” is described in section 95920(d)(2) of the Regulation. The limited exemption is based on an entity’s emissions, and is designed to allow covered entities to accumulate the allowances they need for compliance. For that reason, it is increased each year by the amount of the entity’s reported emissions. The limited exemption is decreased at the end of the year following the close of a compliance period, after the entity has completed its surrender obligation for the compliance period.

Entities can calculate the maximum number of allowances they can hold using the following example and using the holding limit values from Table 2.

Example 4: Determining the maximum number of allowances an entity can hold

The maximum number of allowances an entity can hold at one time equals the holding limit formula plus the limited exemption. For example, assuming an entity takes full advantage of the limited exemption, in 2013 this would be:

$$\text{Maximum Number of Allowances Held} = 5,945,000 + \text{Limited Exemption.}$$

Suppose an entity’s limited exemption is equal to 4,000,000 metric tons and it holds 1,000,000 allowances in its compliance account. Then the maximum number of allowances the entity can purchase and stay within the holding limit is:

Maximum Number of Allowances Purchasable = 5,945,000 + [4,000,000 – 1,000,000] = 8,945,000 allowances.

However, in the above example the entity must transfer 3,000,000 allowances to its compliance account to be in compliance with the holding limit. If an entity's compliance account balance is 4,500,000 allowances, the following applies:

Maximum Number of Allowances = 5,945,000 + [4,000,000 – 4,500,000] = 5,445,000.

Entities can hold more allowances in their compliance account than allowed under the limited exemption, but this practice will not increase what they can hold in their holding account.

Section 95912(j)(3) allows the Executive Officer to transfer allowances won in an auction to an entity's holding account or its compliance account as needed to facilitate compliance with the holding limit. If an entity had a number of allowances in its holding account equal to the holding limit, then the entity could buy at the auction a number of allowances equal to its remaining limited exemption. This is because the Executive Officer can place allowances purchased at auction directly into the entity's compliance account.

IV. Auction Administrator Application of the Bid Evaluation Criteria

Submitted bids that contain bid quantities in excess of the purchase limit, the holding limit, or the value of the bid guarantee will be rejected, in bundles of 1,000 allowances, until the respective limit is met. In short, only that portion of the bid quantity that exceeds the respective limit will be rejected, not the entire bid quantity. Rejected bid quantities will not be considered in determining the settlement price. "Qualified Bids" are the bids that remain after the submitted bids have been evaluated for the holding limit, purchase limit, and bid guarantee.

This determination occurs after the bid window has been closed and before the settlement price is determined. The process is the same for the Current Auction and the Advance Auction. However, the two auctions will be run from the Auction Administrator bid evaluation to the settlement price determination in consecutive order, starting with the Current Auction first. The result is a set of qualified bids from which the settlement price is determined for both the Current Auction and the Advance Auction. For the purposes of this attachment and examples, the reserve price for both the Current Auction and Advance Auction is \$10.00 per allowance. Although the Auction Platform allows entry of bids less than the reserve price, the Auction Administrator will reject any bids whose bid price is less than the reserve price.

Table 2 shows sample bid evaluation data that will be used to demonstrate how the Auction Administrator will evaluate each entity's bids or bid schedule. In some cases, more than one criterion may impact a bid schedule. Auction participants' bids are evaluated against their purchase limit, holding limit, and bid guarantee.

Table 2: Sample Bid Evaluation Data

Bidder Name	Entity Type	Purchase Limit, Number of Allowances	*Holding Limit, Number of Allowances	Bid Guarantee
A	Covered Entity	585,000	5,945,000	\$5,945,000
B	Voluntarily Associated Entity	156,000	5,945,000	\$2,100,000
C	Electric Utility	1,560,000	5,945,000	\$55,000,000
D	Electric Utility	1,560,000	5,945,000	\$25,000,000
E	Covered Entity	585,000	5,945,000	\$11,200,000

*Assumes holding account balance is zero and that allowances in the compliance account are exactly equal to the limited exemption.

In the sample bid evaluation data, the bid guarantees represent actual bid guarantees submitted. In some cases, the bid guarantee is different than shown in Table 1. This is done to demonstrate how the bid guarantee criteria impacts bids if the bid guarantee is less than the bid value at a specific bid price and how the bid guarantee is used in the Advanced Auction.

A. Purchase Limit Evaluation

Example 5: Purchase Limit Evaluation by Comparison of Bid Schedules in Table 1 against the Bid Evaluation Criteria in Table 2.

Entity A: Entity A's bids are within the purchase limit of 585,000 allowances.

Entity B: Entity B's bids are not within the purchase limit as the cumulative total of the 2nd bid is 210,000 allowances and B can only purchase 156,000 allowances. The 2nd bid would be rejected in bundles of 1,000 allowances. Since B's 1st bid is for 130,000 allowances, it can purchase no more than an additional 26,000 allowances (156,000 – 130,000). Thus, B's 2nd bid would be reduced to 26,000 allowances (or 26 bid lots). This qualified bid quantity would be used in calculating the settlement price.

Entity C: Entity C's bids are within the purchase limit of 1,560,000 allowances.

Entity D: Entity D's bids are not within the purchase limit as the cumulative total of the 2nd bid, 1,680,000 allowances, exceeds the purchase limit of 1,560,000. The 2nd bid would be rejected in bundles of 1,000 allowances. Since D's 1st bid is for 900,000 allowances, it can purchase no more than an additional 660,000 allowances (1,560,000 – 900,000). Thus, D's 2nd qualified bid would be limited to 660,000 allowances (or 660 bid lots).

Entity E: Entity E's bids are not within the purchase limit. Following the same logic as for Entity B and D above, E's 3rd bid is acceptable but its 4th bid is too large. If the 4th bid is successful, E can purchase no more than an additional 20,000 allowances (585,000 – 565,000) and its 4th bid would be limited to a qualified bid of 20,000 allowances.

B. Holding Limit Evaluation

The process to evaluate the holding limit is to assess the total Cumulative Allowances against the holding limit in Table 2.

Example 6: Holding Limit Evaluation by Comparison of Bids in Table 1 against the Bid Evaluation Criteria in Table 2.

All entities in this example would pass a check of the holding limit; no bidder has bid for more than 5,945,000 cumulative allowances. At the conclusion of the auction, assuming holding account balances are equal to zero allowances at the start of the auction, allowances placed in entity holding accounts will be less than the holding limit.

C. Bid Guarantee Evaluation

The Auction Administrator will evaluate the submitted bid guarantee for each entity for the Current Auction. As an entity provides a single bid guarantee, any funds remaining once the Current Auction settlement price has been determined will be applied to the Advance Auction.

Example 7: Bid Guarantee Evaluation

Entity A: Entity A's bid guarantee of \$5,945,000 is sufficient to cover its maximum total bid cost of \$5,945,000.

Entity B: Entity B's bid guarantee of \$2,100,000 is sufficient to cover its maximum total bid cost of \$2,100,000.

Entity C: Entity C's bid guarantee of \$55,000,000 is sufficient to cover its maximum total bid cost of \$43,005,000.

Entity D: Entity D's bid guarantee of \$25,000,000 is not sufficient to cover its maximum total bid cost of \$25,536,000. The Auction Administrator would reduce Entity D's 2nd bid to 744,000 allowances. The total allowances that can be purchased are 1,644,736 ($25,000,000 / \$15.20 = 1,644,736$). The total allowances that can be purchased through the 2nd bid is 744,000 (1,644,000 – 900,000).

Thus, D's 2nd bid would be limited to 744,000 allowances (or 744 bid lots) based on the bid guarantee limitation. See Table 1 for Entity D's bidding details.

In the case of D's 2nd qualified bid, the bid does not pass the purchase limit evaluation or the bid guarantee evaluation. When a bid is limited by more than one criterion, the bid will be reduced in lots of 1,000 allowances to the most

limiting constraint. A reduction of the 2nd bid to 744,000 allowances would pass the bid guarantee but not the purchase limit, which requires a reduction to 660,000 allowances. The bid must pass all three evaluations to be qualified and in this example, the most limiting criterion is the purchase limit.

Entity E: Entity E's bid guarantee of \$11,200,000 is sufficient to cover its maximum total bid cost of \$7,203,750.

Table 3 shows the qualified bids after the Auction Administrator's evaluation, with the adjusted bid quantities shaded in grey. These are the bids that would be used in calculating the settlement price. Please note that the cumulative allowances and bid costs are also adjusted as needed.

Table 3: Qualified Bids Accepted by Auction Administrator

Bidder Name	Bid Price	Accepted Bid Lots	Accepted Bid Allowances	Cumulative Allowances	Bid Value at Each Bid Price
A	\$ 18.75	130	130,000	130,000	\$2,437,500
A	\$ 15.25	190	190,000	320,000	\$4,880,000
A	\$ 12.75	135	135,000	455,000	\$5,801,250
A	\$ 10.25	125	125,000	580,000	\$5,945,000
B	\$ 14.70	130	130,000	130,000	\$1,911,000
B	\$ 10.00	26	26,000	156,000	\$1,560,000
C	\$ 35.58	240	240,000	240,000	\$8,539,200
C	\$ 32.19	420	420,000	660,000	\$21,245,400
C	\$ 30.50	750	750,000	1,410,000	\$43,005,000
D	\$ 17.80	900	900,000	900,000	\$16,020,000
D	\$ 15.20	660	660,000	1,560,000	\$23,712,000
E	\$ 16.30	300	300,000	300,000	\$4,890,000
E	\$ 14.50	180	180,000	480,000	\$6,960,000
E	\$ 12.75	85	85,000	565,000	\$7,203,750
E	\$ 10.00	20	20,000	585,000	\$5,850,000

V. Settlement Price Determination Procedures

The process to determine the Settlement Price requires that the Auction Administrator rank bids from all bidders from highest to lowest. Allowances will be sold to bidders,

beginning with the highest qualified bid price and moving to successively lower priced bids, until all of the available allowances are sold. Each bid will be assessed against purchase and holding limits and the bid guarantee as described in the previous section. The bid at which all available allowances are sold becomes the settlement price and this is the price per allowance that all bidders will be charged for the allowances won in the auction. Bids submitted at prices below the settlement price will not win any allowances.

In determining the settlement price, the Auction Administrator may find that the quantity of allowances bid for at a specific price exceeds the remaining allowances available for sale. When this occurs, a tiebreaker procedure is used to determine the number of allowances awarded to each bidder.

This section provides three examples of the calculation of the settlement price. The first example, immediately below, results in the sale of all available allowances with the last winning bid completely exhausting the available allowances. The second example shows the settlement price determination when an entity's bid schedule is limited by the entity's submitted bid guarantee. The third example illustrates the tiebreaker procedure.

Example 8: Settlement Price When The Last Winning Bid Exhausts the Available Allowances

Bidders are assumed to be bidding into a Current Auction. (The process for determining the settlement price is the same for the Current and Advance Auction.) Qualified bids from Entities A to E in the bid evaluation process provided in Table 3 are used in this settlement price example. The quantity of allowances available for sale is 3,900,000.

All qualified bids are arranged from highest to lowest. In Table 4, the 5th column shows cumulative allowances, that is, the sum of allowances bid for at that bid price and all higher bid prices, not cumulative allowances bid for ordered by entity. The 6th column (last column in the table) shows allowances remaining to be sold, which is the difference between the allowance supply of 3,900,000 and the cumulative allowances in the 5th column.

Table 4: Single Round, Sealed Bid Format Example

Bidder Name	Bid Price	Qualified Bid Lots	Qualified Bid Allowances	Cumulative Allowances	Allowance Supply Remaining
C	\$ 35.58	240	240,000	240,000	3,660,000
C	\$ 32.19	420	420,000	660,000	3,240,000
C	\$ 30.50	750	750,000	1,410,000	2,490,000
A	\$ 18.75	130	130,000	1,540,000	2,360,000
D	\$ 17.80	900	900,000	2,440,000	1,460,000
E	\$ 16.30	300	300,000	2,740,000	1,160,000
A	\$ 15.25	190	190,000	2,930,000	970,000
D	\$ 15.20	660	660,000	3,590,000	310,000
B	\$ 14.70	130	130,000	3,720,000	180,000
E	\$ 14.50	180	180,000	3,900,000	0
A	\$ 12.75	135	135,000	4,035,000	0
E	\$ 12.75	85	85,000	4,120,000	0
A	\$ 10.25	125	125,000	4,245,000	0
B	\$ 10.00	26	26,000	4,271,000	0
E	\$ 10.00	20	20,000	4,291,000	0

At the highest bid price of \$35.58, only 240,000 of the allowances have been sold and 3,660,000 allowances remain. At the next lower bid price, \$32.19, a total of 660,000 allowances have been sold and 3,240,000 allowances remain to be sold. Continuing down the 6th column, at the bid price of \$14.50, the entire available supply of allowances is sold and qualified bids at prices below \$14.50 cannot be filled. Hence, the settlement price is \$14.50 (shaded in grey in the table) and 3,900,000 allowances are sold at a total bid cost of \$56,550,000.

Entity A would win 320,000 allowances from its first two bids, its 3rd and 4th bids would be unsuccessful and its total bid cost is \$4,640,000 (320,000 * \$14.50). Allowances won by each bidder and their respective total bid cost are shown in Table 5.

Table 5: Winning Bids Example

Entity Name	Allowances Won	Total Cost
Entity A	320,000	\$4,640,000
Entity B	130,000	\$1,885,000
Entity C	1,410,000	\$20,445,000
Entity D	1,560,000	\$22,620,000
Entity E	480,000	\$6,960,000
Total	3,900,000	\$56,550,000

In Example 8, Entity D is limited by the purchase limit. In contrast to Example 7 with a settlement price of \$15.20, at the settlement price of \$14.50 the bid guarantee does not constrain D's bid quantity of 1,680,000 allowances as its total bid cost would be \$24,360,000, which is less than the submitted bid guarantee of \$25,000,000.

As shown in Table 1, Entity E, while not limited by its bid guarantee, would be able to purchase more allowances at a price of \$10.00 than at \$12.75 (600,000 compared to 565,000) at a lower total bid cost (\$6,000,000 compared to \$7,203,750). This is simply a consequence of a decline in the potential settlement price.

Example 9: Settlement Price Determination When an Entity's Bid Schedule is Limited by the Entity's Submitted Bid Guarantee

Quantity of allowances available for sale = 4,365,000

Example 9 includes the same bid submissions as used in Example 8, the first settlement price example. However, the larger supply of allowances would increase the purchase limits to respectively:

Electricity Distribution Utility = 1,746,000 allowances.

Covered Entity or Opt-In = 654,000 allowances.

Voluntarily Associated Entity = 174,600 allowances.

Entity A: Entity A's bid is still within the purchase limit.

Entity B: Entity B's bid is still not within the purchase limit.

Entity C: Entity C's bid is still within the purchase limit.

Entity D: Entity D's 2nd bid passes the purchase limit (1,746,000 allowances exceeds the 1,680,000 allowances D wishes to purchase). However, D's bid guarantee is limiting – its total bid cost of \$25,536,000 exceeds its bid guarantee

of \$25,000,000. Thus Entity D's 2nd bid at \$15.20 would be limited to 744,000 allowances.

Entity E: Entity E's 4th bid passes the purchase limit. These bid evaluations for the purchase limit are reflected in Table 6.

Table 6 shows the calculation of the settlement price from this auction. In this instance, the settlement price falls to \$10.25, the price at which all allowances are sold.

While Entity D's 2nd bid is limited by the bid guarantee at a price of \$15.20, Entity D can purchase all of the 1,680,000 allowances it wishes to purchase at the potential settlement price of \$10.25 because the total bid cost is less than its bid guarantee.

Entity D's bid guarantee = \$25,000,00

1,680,000 allowances (Table 1 total for Entity D) * \$10.25 = \$17,220,000

Table 6 shows a "bid" shaded in grey for Entity D at \$14.50. This is not a bid Entity D submitted, but is included to demonstrate the first bid price of all submitted bid prices at which D can purchase all 1,680,000 allowances with the submitted bid guarantee since D's total bid cost at \$14.50 is \$24,360,000. At the bid price of \$14.50, all 780,000 allowances bid at \$15.20 may be purchased. This is because, at the bid prices of \$14.50 the cumulative allowances column nets out the 660,000 allowances that Entity D would have been limited to purchasing at \$15.20.

3,900,000 (cumulative allowances) + 780,000 (allowances that can be purchased at \$14.50) – 660,000 (reduced qualified bid at the actual bid price of \$15.20) = 4,020,000 (cumulative allowances).

Entity D can be sold its full 2nd bid quantity when the allowance price falls relative to the price of \$15.20. Given the allowance supply, the settlement price of \$10.25 is below \$14.50, the first submitted bid price at which Entity D can purchase all of the allowances for which it bids.

Table 6: Settlement Price Determination with a Bid Guarantee Limit

Bidder Name	Bid Price	Accepted Bid Lots	Accepted Bid Allowances	Cumulative Allowances	Allowance Supply Remaining
C	\$ 35.58	240	240,000	240,000	4,125,000
C	\$ 32.19	420	420,000	660,000	3,705,000
C	\$ 30.50	750	750,000	1,410,000	2,955,000
A	\$ 18.75	130	130,000	1,540,000	2,825,000
D	\$ 17.80	900	900,000	2,440,000	1,925,000
E	\$ 16.30	300	300,000	2,740,000	1,625,000
A	\$ 15.25	190	190,000	2,930,000	1,435,000
D	\$ 15.20	660	660,000	3,590,000	775,000
B	\$ 14.70	130	130,000	3,720,000	645,000
E	\$ 14.50	180	180,000	3,900,000	465,000
D	\$ 14.50	780	780,000	4,020,000	345,000
A	\$ 12.75	135	135,000	4,155,000	210,000
E	\$ 12.75	85	85,000	4,240,000	125,000
A	\$ 10.25	125	125,000	4,365,000	0
B	\$ 10.00	44	44,000	4,409,000	0
E	\$ 10.00	35	35,000	4,444,000	0

The settlement price algorithm is structured to recognize that a bid that is limited by the bid guarantee at a submitted bid price may not be limited as much or limited at all at potential settlement prices lower than the price submitted by the bidder. If the bidder can be sold more allowances, the settlement price algorithm will do so, up to the limits of the bid guarantee. However, the settlement price algorithm will not sell the bidder more allowances than it bid for; in the example above, Entity D will not win any more than 1,680,000 allowances.

For a Current Auction allowance supply of 4,365,000 allowances, the allowances won by each bidder and their respective total bid cost are shown below.

Table 7: Winning Bids Example

Entity Name	Allowances Won	Total Cost
Entity A	580,000	\$5,945,000
Entity B	130,000	\$1,332,500
Entity C	1,410,000	\$14,452,500
Entity D	1,680,000	\$17,220,000
Entity E	565,000	\$5,791,250
Total	4,365,000	\$44,741,250

Example 10: Tiebreaker Example

Table 8 illustrates the bids from a single round, sealed bid auction format, but is designed to highlight the tiebreaking process as well as what happens when the number of GHG allowances offered for sale is not easily divisible by 1,000. Example 10 includes the same bid submissions as used in Example 8 and 9.

Section 95911(e)(5) of the Regulation specifies the tiebreaker procedure that is used when the sum of bid quantities exceeds the remaining allowances available for sale, for example, bid quantities are equal to 5,000 allowances but at the prior price, only 2,000 allowances remained to be sold. Each entity's share of the allowances bid for is calculated. Each entity is awarded allowances based on its share times the number of allowances remaining to be sold, rounded down to the nearest whole allowance. If there are allowances remaining as a result of rounding down, those allowances are awarded to entities by assigning a random number to each entity. The remaining allowances are awarded to entities starting with the lowest assigned random number and proceeding to the next higher random number until all remaining allowances are awarded. It should be clear that when complete, allowances sold will not be in lots of 1,000.

Available allowances for sale: 4,020,000

The purchase limits for this quantity of allowance supply are:

Electricity Distribution Utility = 1,608,000 allowances.

Covered Entity or Opt-In = 603,000 allowances.

Voluntarily Associated Entity = 160,800 allowances.

Entity A: Entity A's bid is still within the purchase limit.

Entity B: Entity B's 2nd bid is still not within the purchase limit.

Entity C: Entity C's bid is still within the purchase limit.

Entity D: Entity D's 2nd bid is still not within the purchase limit but is not reduced as much as in Example 8, the first settlement price example, since allowance supply is larger. Entity D's purchase limit is still more limiting than the submitted bid guarantee of \$25,000,000.

Entity E: Entity E's 4th bid now passes the purchase limit evaluation. This evaluation is reflected in Table 8.

Table 8 shows the determination of the settlement price for the larger allowance supply of 4,020,000 allowances. Again, bids from all bidders are ranked from highest bid price to lowest. At the settlement price in Example 9 of \$14.50, there are now 72,000 allowances remaining to be sold but at the next bid price of \$12.75, Entities A and E want to purchase 220,000 allowances (as indicated in Table 8 by the negative number of allowances remaining for sale at a price of \$12.75). For this Current Auction, the settlement price is \$12.75 and all 4,020,000 allowances are sold for a total bid cost of \$51,255,000. The auction administrator must implement the tiebreaker procedure to determine allowances won by Entities A and E.

Table 8: Settlement Price Determination with a Tiebreaker

Bidder Name	Bid Price	Accepted Bid Lots	Accepted Bid Allowances	Cumulative Allowances	Allowance Supply Remaining
C	\$ 35.58	240	240,000	240,000	3,780,000
C	\$ 32.19	420	420,000	660,000	3,360,000
C	\$ 30.50	750	750,000	1,410,000	2,610,000
A	\$ 18.75	130	130,000	1,540,000	2,480,000
D	\$ 17.80	900	900,000	2,440,000	1,580,000
E	\$ 16.30	300	300,000	2,740,000	1,280,000
A	\$ 15.25	190	190,000	2,930,000	1,090,000
D	\$ 15.20	708	708,000	3,638,000	382,000
B	\$ 14.70	130	130,000	3,768,000	252,000
E	\$ 14.50	180	180,000	3,948,000	72,000
A	\$ 12.75	135	135,000	4,083,000	-63,000
E	\$ 12.75	85	85,000	4,168,000	-148,000
A	\$ 10.25	125	125,000	4,293,000	0
B	\$ 10.00	30	30,000	4,323,000	0
E	\$ 10.00	35	35,000	4,358,000	0

Entities A and E bid for a total of 220,000 allowances at the bid price of \$12.75.

Entity A's share is 61.3636 percent ($135,000/220,000 = 0.613636$).

Entity E's share is 38.6363 percent ($85,000/220,000 = 0.386363$).

Entity A would be awarded 44,181 allowances ($0.613636 * 72,000$, rounded down to the nearest whole allowance).

Entity E would be awarded 27,818 allowances ($0.386363 * 72,000$, rounded down to the nearest whole allowance).

The total number of allowances awarded is 71,999; one allowance remains to be awarded by the lowest random number. If Entity A is assigned a random number of 5 and Entity E is assigned 77, the last allowance is awarded to A.

Allowances won in the tiebreaker are added to allowances won at higher bid prices. For example, A's total allowances are 364,182 ($130,000 + 190,000 + 44,181 + 1$).

Allowances won by each bidder and their respective total bid cost are shown in Table 9.

Table 9: Winning Bids Example

Entity Name	Allowances Won	Total Cost
Entity A	364,182	\$4,643,320.50
Entity B	130,000	\$1,657,500.00
Entity C	1,410,000	\$17,977,500.00
Entity D	1,608,000	\$20,502,000.00
Entity E	507,818	\$6,474,679.50
Total	4,020,000	\$51,255,000.00

VI. Bid Evaluation in Advance Auction

In these examples, the assumption is that bids were entered into a Current Auction. The bid evaluation process for an Advance Auction is the same, although the bid guarantee available would be different.

Bidders submit a single bid guarantee instead of two separate bid guarantees, one for the Current Auction and one for the Advance Auction. As the bidder submits a single bid guarantee, the dollar amount will be applied first to the Current Auction and the remainder to the Advance Auction. With the settlement price determined for the Current Auction, the Auction Administrator knows the remaining amount of the bid guarantee.