Friday, December 8, 2023

CO₂ Allowances Sold for $14.88 in 62nd RGGI Auction

Final Auction of 2023 raises $411.5 Million for Reinvestment

NEW YORK — The participating states in the Regional Greenhouse Gas Initiative (RGGI), the nation’s first market-based regulatory effort to reduce greenhouse gas (GHG) pollution, today announced the results of their 62nd auction of carbon dioxide (CO₂) allowances.

27,656,000 CO₂ allowances were sold at the auction at a clearing price of $14.88. This includes an initial offering of 22,090,709 allowances, and 5,565,291 CCR allowances. Bids for the CO₂ allowances ranged from $2.50 to $20.00 per allowance. Additional details are available in the Market Monitor Report for Auction 62, which is appended.

The auction generated $411.5 million for states to reinvest in strategic programs, including energy efficiency, renewable energy, direct bill assistance, and GHG abatement programs.

11.25 million cost containment reserve (CCR) allowances were available for sale. The CCR is a fixed additional supply of allowances that are made available for sale if an auction’s interim clearing price exceeds a certain price level ($14.88 in 2023). Of the 27.7 million allowances sold in Auction 62, 5.6 million were CCR allowances.

In addition, 10.62 million emissions containment reserve (ECR) allowances were available for withholding. The ECR is a designated quantity of allowances to be withheld if an auction’s interim clearing price is below an established price level ($6.87 in 2023). No ECR allowances were withheld in Auction 62.

“The 62nd RGGI auction marks a milestone of over $7 billion generated for reinvestment by the RGGI states,” said Katie Dykes, Commissioner of the Connecticut Department of Energy & Environmental Protection and Chair of the RGGI, Inc. Board of Directors. “For the last 15 years, auction proceeds have been invested by each of the RGGI states to further their environmental goals, build a clean energy future, and provide direct support to residents across the region.”

“The 62nd RGGI auction marks the end of another successful year of RGGI operation for all of the participating states,” said Serena McIlwain, Secretary of the Maryland Department of the Environment and Vice Chair of the RGGI, Inc. Board of Directors. “For over fifteen years now, the RGGI states have shown that hard work and bipartisan cooperation can create effective energy policy and deliver real public, economic, and environmental benefits.”
### Auction 62 Results At-A-Glance

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auction Date</strong></td>
<td>December 6, 2023</td>
</tr>
<tr>
<td><strong>Allowances Initially Offered for Sale</strong></td>
<td>22,090,709</td>
</tr>
<tr>
<td><strong>CCR Allowances Available</strong></td>
<td>11,245,778</td>
</tr>
<tr>
<td><strong>CCR Allowances Sold</strong></td>
<td>5,565,291</td>
</tr>
<tr>
<td><strong>Total Allowances Sold</strong></td>
<td>27,656,000</td>
</tr>
<tr>
<td><strong>Ratio of Bids to Supply</strong></td>
<td>2.8x</td>
</tr>
<tr>
<td><strong>Clearing Price</strong></td>
<td>$14.88</td>
</tr>
<tr>
<td><strong>Reserve Price</strong></td>
<td>$2.50</td>
</tr>
<tr>
<td><strong>Proceeds from Auction 62</strong></td>
<td>$411,521,280</td>
</tr>
<tr>
<td><strong>Total Cumulative Proceeds (All Auctions)</strong></td>
<td>$7,160,215,872.41</td>
</tr>
<tr>
<td><strong>Number of Bidders in Auction 62</strong></td>
<td>60</td>
</tr>
<tr>
<td><strong>Percent of Allowances Purchased by Compliance-Oriented Entities in Auction 62</strong></td>
<td>64%</td>
</tr>
<tr>
<td><strong>Percent of Allowances Purchased by Compliance Entities in Auction 62</strong></td>
<td>67%</td>
</tr>
<tr>
<td><strong>Percent of Allowances Purchased by Compliance Entities in Auctions 1 - 62</strong></td>
<td>73%</td>
</tr>
</tbody>
</table>


**About the Regional Greenhouse Gas Initiative (RGGI)**

The Eastern states participating in the fifth RGGI control period have implemented the first mandatory market-based regulatory program in the U.S. to reduce greenhouse gas emissions.

RGGI is composed of individual CO₂ budget trading programs in each state, based on each state's independent legal authority. A CO₂ allowance represents a limited authorization to emit one short ton of CO₂, as issued by a respective state. A regulated power plant must provide CO₂ allowances equal to its emissions for each three-year control period. RGGI’s fifth control period began on January 1, 2021 and extends through December 31, 2023. For more information visit [www.rggi.org](http://www.rggi.org).

**About the Regional Greenhouse Gas Initiative, Inc.**

The Regional Greenhouse Gas Initiative, Inc. (RGGI, Inc.) was created to provide technical and administrative services to the states participating in the Regional Greenhouse Gas Initiative. RGGI, Inc. is a 501(c)(3) nonprofit organization. For more information, visit: [www.rggi.org/rggi-inc/contact](http://www.rggi.org/rggi-inc/contact).
MARKET MONITOR REPORT
FOR AUCTION 62

Prepared for:
RGGI, Inc., on behalf of the RGGI Participating States

Prepared By:
POTOMAC ECONOMICS

December 8, 2023
This report was prepared by Potomac Economics (the contractor) in the course of performing work contracted for and sponsored by RGGI, Inc. on behalf of states participating in RGGI (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia). The opinions expressed in this report do not necessarily reflect those of RGGI, Inc. or any of the states participating in RGGI, and reference to any specific product, service, process, or method does not constitute an implied or expressed recommendation or endorsement of it. Further, RGGI, Inc., the states participating in RGGI, and the contractor make no warranties or representations, expressed or implied, as to the fitness for particular purpose or merchantability of any product, apparatus, or service, or the usefulness, completeness, or accuracy of any processes, methods, or other information contained, described, disclosed, or referred to in this report. RGGI, Inc., the states participating in RGGI, and the contractor make no representation that the use of any product, apparatus, process, method, or other information will not infringe privately owned rights and will assume no liability for any loss, injury, or damage resulting from, or occurring in connection with, the use of information contained, described, disclosed, or referred to in this report.

The Regional Greenhouse Gas Initiative (RGGI) is the first mandatory market-based regulatory initiative in the U.S. to reduce greenhouse gas emissions. RGGI is a cooperative effort of New England and Mid-Atlantic states to reduce emissions of carbon dioxide (CO₂) from the power sector.

RGGI, Inc. is a non-profit corporation created to provide technical and administrative services to the states participating in the Regional Greenhouse Gas Initiative.

1 While technically a RGGI participating state, Pennsylvania is currently under order from the state’s Commonwealth Court prohibiting it from actively participating in RGGI & RGGI Inc. related activities. Final adjudication of these matters is not expected until sometime in 2023.
MARKET MONITOR REPORT FOR AUCTION 62

As the Market Monitor for the RGGI CO₂ allowance market, Potomac Economics monitors the conduct of market participants in the auctions and in the secondary market to identify indications of market manipulation or collusion. We also review the administration of the allowance auctions by Enel X. This report summarizes our findings regarding RGGI Auction 62, which was held on December 6, 2023.

We observed the auction as it occurred and have completed our review and analysis of its results. Based on our review of bids in the auction, we find no material evidence of collusion or manipulation by bidders.

Sixty bidders participated in the auction for CO₂ allowances. Bids were submitted to purchase 2.8 times the initial offering of approximately 22.1 million allowances. However, the quantity for which bids were submitted above $14.88 per ton exceeded the initial offering, so the Cost Containment Reserve (“CRR”) was made available at the CCR Trigger Price of $14.88 per ton. Over 5.5 million additional allowances were sold, resulting in partial depletion of the CCR for 2023 and a clearing price of $14.88 per ton in the auction. Compliance-Oriented Entities purchased 64 percent of the allowances in the offering. There was no indication of barriers to participation in the auction.

Based on our review of the administration of the market, we found that:

- The auction was administered in a fair and transparent manner in accordance with the noticed auction procedures and limitations.
- The auction results were consistent with the market rules and the bids received.
- Sensitive information was treated appropriately by the auction administrator.
- There were no indications of issues with the auction platform such as hardware or software problems, communications issues, or security breaches.

In summary, the results of our monitoring of RGGI Auction 62 raise no material concerns regarding the auction process, barriers to participation in the auction, or the competitiveness of the auction results. The appendix provides additional information about the market for RGGI CO₂ allowances and outcomes of the auction.
**APPENDIX**

**A. DISPERSION OF PROJECTED DEMAND**

The wide dispersion of projected demand for RGGI allowances across compliance entities facilitates the competitive performance of the auction.

The demand for CO₂ allowances is based on the requirement for each compliance entity in the RGGI footprint to obtain one CO₂ allowance for each short ton of CO₂ that it emits from the sale of electricity. The following figure shows the relative shares of projected demand for RGGI allowances by compliance entity in the fifth control period. The largest compliance entity represents 16 percent of the total projected demand for allowances. Nearly half of the projected demand is composed of entities that each account for less than 5 percent of the total demand. Participation by a large number of entities facilitates the competitive performance of the auction.

**Figure 1: Projected Demand for RGGI Allowances**

*Shares by Compliance Entity*
B. SUMMARY OF PURCHASES OF ALLOWANCES IN AUCTION 62

Awards were distributed across 54 bidders with seven bidders purchasing one million tons or more and 33 bidders purchasing 200,000 tons or more.

This report summarizes participation in Auction 62. Participation in the RGGI market involves many different firms with various interests in RGGI allowances. Some participate in order to satisfy compliance obligations, others have investment interests, and still others participate for both purposes. To more effectively track the activity of different participants, we use several classifications for participant firms. Figure 2 summarizes the relationship between these classifications.

**Figure 2: Classifications of Participant Firms in the RGGI Marketplace**

- **Compliance-Oriented Entities** are compliance entities that appear to acquire and hold allowances primarily to satisfy their compliance obligations.
- **Investors with Compliance Obligations** are firms that have compliance obligations but which hold a number of allowances that exceeds their estimated compliance obligations by a margin suggesting they also buy for re-sale or some other investment purpose. These firms often transfer significant quantities of allowances to unaffiliated firms.²

² The assessment of whether a compliance entity holds a number of allowances that exceeds its compliance obligations by a margin that suggests they are also buying for re-sale or some other investment purpose is based on: (a) the entity’s forecasted share of the total compliance obligations in the RGGI footprint through 2026, (b) the total number of allowances in circulation, and (c) consideration of the pattern of the entity’s allowance transfers to unaffiliated firms versus affiliated firms. Since the designation of a compliance entity as an investor is based on a review of its transactions and holdings, the designation of a particular firm may change over time as more information becomes available.
• **Investors without Compliance Obligations** are firms without any compliance obligations. These three categories form the basis for two overlapping groups.

  - **Compliance Entities** – All firms with compliance obligations and their affiliates.\(^3\) Combines the first and second of the above categories.
  
  - **Investors** – All firms which are assessed to be purchasing for investment rather than compliance purposes. Combines the second and third of the above categories.

In Auction 62, Compliance Entities purchased 67 percent of the allowances sold. In the first 62 RGGI auctions, Compliance Entities purchased 73 percent of the allowances sold. In Auction 62, Compliance-Oriented Entities purchased 62 percent of the allowances sold.

After settlement of allowances sold in Auction 62:

  - Sixty-two percent of the allowances in circulation will be held by Compliance-Oriented Entities.
  
  - Sixty-five percent of the allowances in circulation are believed to be held for compliance purposes. The number of allowances that are believed to be held for compliance purposes includes 100 percent of the allowances held by Compliance-Oriented Entities and a portion of allowances held by Investors with Compliance Obligations.

The following table shows the quantity of allowances purchased by each bidder. The identity of each bidder is masked, and the bidders are ranked according to the amount of allowances awarded, from largest to smallest.

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\(^{3}\) Affiliates are firms that: (i) have a parent-subsidiary relationship with a compliance entity, (ii) are subsidiaries of a parent company that has a large interest in a compliance entity, (iii) have substantial control over the operation of a budget source and/or responsibility for acquiring RGGI allowances to satisfy its compliance obligations.
Table 1: Quantity of Allowances Awarded by Bidder

<table>
<thead>
<tr>
<th>Bidder</th>
<th>Number of Allowances Awarded</th>
<th>Bidder</th>
<th>Number of Allowances Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder 1</td>
<td>2,950,000</td>
<td>Bidder 28</td>
<td>252,000</td>
</tr>
<tr>
<td>Bidder 2</td>
<td>2,500,000</td>
<td>Bidder 29</td>
<td>250,000</td>
</tr>
<tr>
<td>Bidder 3</td>
<td>2,450,000</td>
<td>Bidder 30</td>
<td>215,000</td>
</tr>
<tr>
<td>Bidder 4</td>
<td>2,250,000</td>
<td>Bidder 31</td>
<td>200,000</td>
</tr>
<tr>
<td>Bidder 5</td>
<td>2,000,000</td>
<td>Bidder 32</td>
<td>200,000</td>
</tr>
<tr>
<td>Bidder 6</td>
<td>1,800,000</td>
<td>Bidder 33</td>
<td>200,000</td>
</tr>
<tr>
<td>Bidder 7</td>
<td>1,160,000</td>
<td>Bidder 34</td>
<td>198,000</td>
</tr>
<tr>
<td>Bidder 8</td>
<td>950,000</td>
<td>Bidder 35</td>
<td>118,000</td>
</tr>
<tr>
<td>Bidder 9</td>
<td>800,000</td>
<td>Bidder 36</td>
<td>90,000</td>
</tr>
<tr>
<td>Bidder 10</td>
<td>705,000</td>
<td>Bidder 37</td>
<td>75,000</td>
</tr>
<tr>
<td>Bidder 11</td>
<td>700,000</td>
<td>Bidder 38</td>
<td>65,000</td>
</tr>
<tr>
<td>Bidder 12</td>
<td>671,000</td>
<td>Bidder 39</td>
<td>60,000</td>
</tr>
<tr>
<td>Bidder 13</td>
<td>663,000</td>
<td>Bidder 40</td>
<td>50,000</td>
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<td>Bidder 14</td>
<td>600,000</td>
<td>Bidder 41</td>
<td>35,000</td>
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<td>Bidder 15</td>
<td>600,000</td>
<td>Bidder 42</td>
<td>35,000</td>
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<tr>
<td>Bidder 16</td>
<td>553,000</td>
<td>Bidder 43</td>
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<td>Bidder 17</td>
<td>500,000</td>
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<td>22,000</td>
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<td>Bidder 18</td>
<td>452,000</td>
<td>Bidder 45</td>
<td>20,000</td>
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<td>Bidder 19</td>
<td>414,000</td>
<td>Bidder 46</td>
<td>15,000</td>
</tr>
<tr>
<td>Bidder 20</td>
<td>403,000</td>
<td>Bidder 47</td>
<td>10,000</td>
</tr>
<tr>
<td>Bidder 21</td>
<td>400,000</td>
<td>Bidder 48</td>
<td>9,000</td>
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<td>Bidder 22</td>
<td>400,000</td>
<td>Bidder 49</td>
<td>7,000</td>
</tr>
<tr>
<td>Bidder 23</td>
<td>335,000</td>
<td>Bidder 50</td>
<td>5,000</td>
</tr>
<tr>
<td>Bidder 24</td>
<td>333,000</td>
<td>Bidder 51</td>
<td>3,000</td>
</tr>
<tr>
<td>Bidder 25</td>
<td>302,000</td>
<td>Bidder 52</td>
<td>2,000</td>
</tr>
<tr>
<td>Bidder 26</td>
<td>300,000</td>
<td>Bidder 53</td>
<td>1,000</td>
</tr>
<tr>
<td>Bidder 27</td>
<td>297,000</td>
<td>Bidder 54</td>
<td>1,000</td>
</tr>
</tbody>
</table>
C. DISPERSION OF BIDS IN AUCTION 62

Bids were submitted by 39 Compliance-Oriented Entities and 21 Investors. In our review of the bids and the qualification process, we found no material evidence of anti-competitive conduct or inappropriate barriers to participation.

The following figure summarizes the quantity of allowances for which bids were submitted by each bidder. Nine Compliance-Oriented Entities and eight Investors submitted bids for a large quantity of allowances (i.e., at least 1 million tons). Overall, Compliance-Oriented Entities accounted for 47 percent of the quantity of allowances for which bids were submitted. The quantity of allowances for which bids were submitted was 2.8 times the Initial Offering. In the previous auction, the quantity of allowances for which bids were submitted was 2.2 times the Initial Offering.

The bid quantities were widely distributed among the 60 bidders. The concentration of bids, using the Herfindahl-Hirschman Index (“HHI”), was relatively low at 493. The HHI is a standard measure of concentration calculated by squaring each entity’s percent share and then summing the squares across all entities (i.e., the index ranges from 0 to 10,000).

Figure 3: Quantity of Bids Submitted by Entity
By Type of Entity and Quantity Bid

<table>
<thead>
<tr>
<th>Number of Bidders:</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance-Oriented Share of Bids:</td>
<td>47%</td>
</tr>
<tr>
<td>Ratio of Bids to Supply (Initial):</td>
<td>2.8</td>
</tr>
<tr>
<td>HHI of Bid Concentration:</td>
<td>493</td>
</tr>
</tbody>
</table>

- Investors
- Compliance-Oriented Entities
D. SUMMARY OF BID PRICES IN AUCTION 62

Bids were submitted across a wide range of prices in the auction and the clearing price of $14.88 was relatively consistent with average bid prices submitted.

The following table reports several statistics regarding the bid prices for bids submitted in Auction 62. The median and mean bid prices are weighted by the quantity of each bid.

<table>
<thead>
<tr>
<th>Bid Prices:</th>
<th></th>
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<tbody>
<tr>
<td>Minimum</td>
<td>$2.50</td>
</tr>
<tr>
<td>Maximum</td>
<td>$20.00</td>
</tr>
<tr>
<td>Average (Median)</td>
<td>$14.87</td>
</tr>
<tr>
<td>Average (Mean)</td>
<td>$13.53</td>
</tr>
<tr>
<td>Clearing Price:</td>
<td>$14.88</td>
</tr>
</tbody>
</table>
E. NAMES OF POTENTIAL BIDDERS IN AUCTION 62

In accordance with Sections 2.8 and 3 of the Auction Notice for CO2 Allowance Auction 62, the Participating States are releasing the names of Potential Bidders in Auction 62. The states defined potential bidders as: “Each Applicant that has been qualified and submitted a complete Intent to Bid.” The list of 73 Potential Bidders is as follows:

Anew Environmental, LLC
Appalachian Power Company
Astoria Energy, LLC
BP Products North America Inc.
Braintree Electric Light Department
Buchanan Generation
Caithness Long Island, LLC
Calpine Energy Services, LP
Canadian Imperial Bank of Commerce
Carbon Lighthouse Association
Citadel Energy Marketing LLC
Clear Sky Enhanced Inflation Carbon Master Fund LP
CLIFI Carbon LLC
Cogen Technologies Linden Venture, L.P.
Coloma Strategies LLC
Commonwealth Chesapeake Company, LLC
Consolidated Edison Comp. of NY, Inc.
Constellation Energy Generation, LLC
Cooler, Inc.
CPV Maryland, LLC
CPV Shore, LLC
CPV Towantic, LLC
CPV Valley, LLC
Cricket Valley Energy Center, LLC
Delaware City Refining Company, LLC
DTE Energy Trading, Inc.
Dynegy Marketing and Trade, LLC
East Coast Environmental, LLC
Edgewood Energy, LLC
Elbow River Marketing LTD.
Empire Generating Co., LLC
Equus Power I, LP
Global Carbon Opportunity (SPV) Fund LLC
Hartree Partners, LP
Helix Ravenswood Energy, LLC
Kcarbon Holdings LLC
Kendall Green Energy LLC

Kleen Energy Systems, LLC
KMC Thermo, LLC
LMR Multi-Strategy Master Fund Limited
Lucid Clarity Master Fund LP
Macquarie Energy, LLC
Mercuria Energy America, LLC
Morgan Stanley Capital Group, Inc.
MV Global Carbon Fund LP
National Grid Generation LLC dba National Grid
New Athens Generating Company, LLC
Newark Energy Center
NextEra Energy Marketing, LLC
NRG Business Marketing LLC
Old Dominion Electric Cooperative
Pacific Summit Energy LLC
Parkway Generation, LLC
Pinelawn Power, LLC
Pixelle Androscoggin LLC
Potomac Energy Center, LLC
Power Authority of the State of New York
RBC
Rhode Island State Energy Center, LP
Rubicon Carbon Services LLC
Selkirk Cogen Partners, LP
Shell Energy North America (US), LP
Shoreham Energy, LLC
Statkraft US, LLC
STX Commodities LLC
Tenaska Pennsylvania Partners, LLC
Tenaska, Inc.
Trafignura Trading LLC
Village of Freeport
Virginia Electric and Power Company
Vitol Inc.
Wallingford Energy, LLC
World Carbon Fund