CO₂ Allowances Sold for $12.99 in 58th RGGI Auction

Final Auction of 2022 Raises Over $288 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 58th auction of carbon dioxide (CO₂) allowances.

22,233,203 CO₂ allowances were sold at the auction at a clearing price of $12.99. Bids for the CO₂ allowances ranged from $2.44 to $22.00 per allowance. Additional details are available in the Market Monitor Report for Auction 58, which is appended.

The auction generated $288.8 million for states to reinvest in strategic programs, including energy efficiency, renewable energy, direct bill assistance, and GHG abatement programs.

11.61 million cost containment reserve (CCR) allowances were also 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 ($13.91 in 2022). No CCR allowances were sold in Auction 58.

In addition, 10.96 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 ($6.42 in 2022). No ECR allowances were withheld in Auction 58.

“The completion of the 58th RGGI auction marks another successful year of operations for all the participating RGGI states,” said Katie Dykes, Commissioner of the Connecticut Department of Energy & Environmental Protection and Chair of the RGGI, Inc. Board of Directors. “With over $5.8 billion raised to date for investment in clean energy, energy efficiency, and direct consumer benefit programs, we are proud of what the RGGI states have accomplished together and look forward to the continued success of this collaborative effort.”

“The RGGI states continue to demonstrate that bipartisan collaboration matters, and well-run carbon markets can deliver tangible environmental, social, and health benefits,” said Martin Suuberg, Commissioner of the Massachusetts Department of Environmental Protection and Vice Chair of the RGGI, Inc. Board of Directors. “RGGI's market-based approach delivers cost-effective emissions reductions, while strengthening the regional economy by generating investments into communities across the participating states.”
Auction 58 Results At-A-Glance

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auction Date</td>
<td>December 7, 2022</td>
</tr>
<tr>
<td>Allowances Initially Offered for Sale</td>
<td>22,233,203</td>
</tr>
<tr>
<td>Total Allowances Sold</td>
<td>22,233,203</td>
</tr>
<tr>
<td>Ratio of Bids to Supply</td>
<td>2.4x</td>
</tr>
<tr>
<td>Clearing Price</td>
<td>$12.99</td>
</tr>
<tr>
<td>Reserve Price</td>
<td>$2.44</td>
</tr>
<tr>
<td>Proceeds from Auction 58</td>
<td>$288,809,306.97</td>
</tr>
<tr>
<td>Total Cumulative Proceeds (All Auctions)</td>
<td>$5,895,274,757.14</td>
</tr>
<tr>
<td>Number of Bidders in Auction 58</td>
<td>67</td>
</tr>
<tr>
<td>Percent of Allowances Purchased by Compliance-Oriented Entities in Auction 58</td>
<td>66%</td>
</tr>
<tr>
<td>Percent of Allowances Purchased by Compliance Entities in Auction 58</td>
<td>71%</td>
</tr>
<tr>
<td>Percent of Allowances Purchased by Compliance Entities in Auctions 1 - 58</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).
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,1 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 58

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 58, which was held on December 7, 2022.

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-seven bidders participated in the auction for CO₂ allowances. Bids were submitted to purchase 2.4 times the initial offering of approximately 22.2 million allowances, resulting in a clearing price of $12.99 per ton in the auction. The Cost Containment Reserve ("CRR") Trigger Price is $13.91 per ton for auctions held in 2022, so no CCR allowances were sold in the auction. Compliance-Oriented Entities purchased 66 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 58 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 17 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 58

Awards were distributed across 60 bidders with seven bidders purchasing one million tons or more and 24 bidders purchasing 200,000 tons or more.

This report summarizes participation in Auction 58. 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 58, Compliance Entities purchased 71 percent of the allowances sold. In the first 58 RGGI auctions, Compliance Entities purchased 73 percent of the allowances sold. In Auction 58, Compliance-Oriented Entities purchased 66 percent of the allowances sold.

After settlement of allowances sold in Auction 58:

• Fifty-three percent of the allowances in circulation will be held by Compliance-Oriented Entities.

• Fifty-eight 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.

---

\(^3\) 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>
<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>4,863,203</td>
<td>Bidder 31</td>
<td>79,000</td>
</tr>
<tr>
<td>Bidder 2</td>
<td>2,500,000</td>
<td>Bidder 32</td>
<td>78,000</td>
</tr>
<tr>
<td>Bidder 3</td>
<td>1,250,000</td>
<td>Bidder 33</td>
<td>77,000</td>
</tr>
<tr>
<td>Bidder 4</td>
<td>1,240,000</td>
<td>Bidder 34</td>
<td>75,000</td>
</tr>
<tr>
<td>Bidder 5</td>
<td>1,072,000</td>
<td>Bidder 35</td>
<td>75,000</td>
</tr>
<tr>
<td>Bidder 6</td>
<td>1,050,000</td>
<td>Bidder 36</td>
<td>70,000</td>
</tr>
<tr>
<td>Bidder 7</td>
<td>1,000,000</td>
<td>Bidder 37</td>
<td>55,000</td>
</tr>
<tr>
<td>Bidder 8</td>
<td>900,000</td>
<td>Bidder 38</td>
<td>50,000</td>
</tr>
<tr>
<td>Bidder 9</td>
<td>800,000</td>
<td>Bidder 39</td>
<td>50,000</td>
</tr>
<tr>
<td>Bidder 10</td>
<td>750,000</td>
<td>Bidder 40</td>
<td>45,000</td>
</tr>
<tr>
<td>Bidder 11</td>
<td>750,000</td>
<td>Bidder 41</td>
<td>44,000</td>
</tr>
<tr>
<td>Bidder 12</td>
<td>607,000</td>
<td>Bidder 42</td>
<td>37,000</td>
</tr>
<tr>
<td>Bidder 13</td>
<td>600,000</td>
<td>Bidder 43</td>
<td>30,000</td>
</tr>
<tr>
<td>Bidder 14</td>
<td>464,000</td>
<td>Bidder 44</td>
<td>25,000</td>
</tr>
<tr>
<td>Bidder 15</td>
<td>375,000</td>
<td>Bidder 45</td>
<td>22,000</td>
</tr>
<tr>
<td>Bidder 16</td>
<td>350,000</td>
<td>Bidder 46</td>
<td>18,000</td>
</tr>
<tr>
<td>Bidder 17</td>
<td>310,000</td>
<td>Bidder 47</td>
<td>16,000</td>
</tr>
<tr>
<td>Bidder 18</td>
<td>308,000</td>
<td>Bidder 48</td>
<td>15,000</td>
</tr>
<tr>
<td>Bidder 19</td>
<td>301,000</td>
<td>Bidder 49</td>
<td>15,000</td>
</tr>
<tr>
<td>Bidder 20</td>
<td>276,000</td>
<td>Bidder 50</td>
<td>10,000</td>
</tr>
<tr>
<td>Bidder 21</td>
<td>210,000</td>
<td>Bidder 51</td>
<td>7,000</td>
</tr>
<tr>
<td>Bidder 22</td>
<td>200,000</td>
<td>Bidder 52</td>
<td>6,000</td>
</tr>
<tr>
<td>Bidder 23</td>
<td>200,000</td>
<td>Bidder 53</td>
<td>6,000</td>
</tr>
<tr>
<td>Bidder 24</td>
<td>200,000</td>
<td>Bidder 54</td>
<td>4,000</td>
</tr>
<tr>
<td>Bidder 25</td>
<td>150,000</td>
<td>Bidder 55</td>
<td>2,000</td>
</tr>
<tr>
<td>Bidder 26</td>
<td>150,000</td>
<td>Bidder 56</td>
<td>2,000</td>
</tr>
<tr>
<td>Bidder 27</td>
<td>146,000</td>
<td>Bidder 57</td>
<td>1,000</td>
</tr>
<tr>
<td>Bidder 28</td>
<td>114,000</td>
<td>Bidder 58</td>
<td>1,000</td>
</tr>
<tr>
<td>Bidder 29</td>
<td>100,000</td>
<td>Bidder 59</td>
<td>1,000</td>
</tr>
<tr>
<td>Bidder 30</td>
<td>80,000</td>
<td>Bidder 60</td>
<td>1,000</td>
</tr>
</tbody>
</table>
C. **DISPERSION OF BIDS IN AUCTION 58**

Bids were submitted by 41 Compliance-Oriented Entities and 26 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. Six Compliance-Oriented Entities and ten Investors submitted bids for a large quantity of allowances (i.e., at least 1 million tons). Overall, Compliance-Oriented Entities accounted for 45 percent of the quantity of allowances for which bids were submitted. The quantity of allowances for which bids were submitted was 2.4 times the Initial Offering. In the previous auction, the quantity of allowances for which bids were submitted was 2.6 times the Initial Offering.

The bid quantities were widely distributed among the 67 bidders. The concentration of bids, using the Herfindahl-Hirschman Index (“HHI”), was relatively low at 549. 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](image)
D. SUMMARY OF BID PRICES IN AUCTION 58

Bids were submitted across a wide range of prices in the auction and the clearing price of $12.99 was relatively consistent with average bid prices submitted.

The following table reports several statistics regarding the bid prices for bids submitted in Auction 58. The median and mean bid prices are weighted by the quantity of each bid.

<table>
<thead>
<tr>
<th>Bid Prices:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>$2.44</td>
</tr>
<tr>
<td>Maximum</td>
<td>$22.00</td>
</tr>
<tr>
<td>Average (Median)</td>
<td>$12.80</td>
</tr>
<tr>
<td>Average (Mean)</td>
<td>$11.58</td>
</tr>
<tr>
<td>Clearing Price:</td>
<td>$12.99</td>
</tr>
</tbody>
</table>
E. NAMES OF POTENTIAL BIDDERS IN AUCTION 58

In accordance with Sections 2.8 and 3 of the Auction Notice for CO2 Allowance Auction 58, the Participating States are releasing the names of Potential Bidders in Auction 58. The states defined potential bidders as: “Each Applicant that has been qualified and submitted a complete Intent to Bid.” The list of 80 Potential Bidders is as follows:

Appalachian Power Company
Astoria Energy, LLC
Benjamin Brooks
Birchwood Power Partners, L.P
BP Products North America Inc.
Buchanan Generation
Caitness Long Island, LLC
Calpine Energy Services, LP
Carbon Lighthouse Association
Citadel Energy Marketing LLC
Clear Sky Enhanced Inflation Carbon Master Fund LP
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
David Luke Oates
Delaware City Refining Company, LLC
DTE Energy Trading, Inc.
Dynegy Marketing and Trade, LLC
East Coast Environmental, LLC
Edgewood Energy, LLC
EFS Parlin Holdings, LLC
Elbow River Marketing LTD.
Element Markets Emissions, LLC
Empire Generating Co., LLC
Energy Center Dover
Equus Power I, LP
Footprint Power Salem Harbor Development LP
Gen IV Investment Opportunities, LLC
Hartree Partners, LP
Hawkeye Energy Greenport
Helix Ravenswood Energy, LLC
Indeck-Corinth Limited Partnership
Indeck-Olean Limited Partnership
J. Aron & Company
Jamestown Board of Public Utilities
Kcarbon Holdings LLC
Kendall Green Energy LLC
Kleen Energy Systems, LLC
KMC Thermo, LLC
Koch Supply & Trading, LP
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
Nautilus Power, LLC
New Athens Generating Company, LLC
Newark Energy Center
NextEra Energy Marketing, LLC
NRG Power Marketing LLC
Ocean State Power, LLC
Old Dominion Electric Cooperative
Pegasus Development Corporation
Pinelawn Power, LLC
Pixelle Androscoggin LLC
Power Authority of the State of New York
RBC
Selkirk Cogen Partners, LP
Shell Energy North America (US), LP
Shoreham Energy, LLC
Statkraft US, LLC
STX Commodities LLC
Taunton Municipal Lighting Plant
Tenaska Pennsylvania Partners, LLC
Tenaska, Inc.
Trafigura Trading LLC
Village of Freeport
Virginia Electric and Power Company
Vitol Inc.
Wallingford Energy, LLC
William MacLeod
World Carbon Fund