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. 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.

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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.
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 60, which was held on June 7, 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.

Fifty-one bidders participated in the auction for CO₂ allowances. Bids were submitted to purchase 1.9 times the initial offering of approximately 22.0 million allowances, resulting in a clearing price of $12.73 per ton in the auction. The Cost Containment Reserve ("CRR") Trigger Price is $14.88 per ton for auctions held in 2023, so no CCR allowances were sold in the auction. The Emissions Containment Reserve ("ECR") Trigger Price is $6.87 per ton for auctions held in 2023, so no ECR allowances were withheld from sale in the auction. Compliance-Oriented Entities purchased 50 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 60 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 60

Awards were distributed across 49 bidders with eight bidders purchasing one million tons or more and 21 bidders purchasing 200,000 tons or more.

This report summarizes participation in Auction 60. 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 60, Compliance Entities purchased 63 percent of the allowances sold. In the first 60 RGGI auctions, Compliance Entities purchased 73 percent of the allowances sold. In Auction 60, Compliance-Oriented Entities purchased 50 percent of the allowances sold.

After settlement of allowances sold in Auction 60:

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

  • Sixty 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>3,075,000</td>
<td>Bidder 26</td>
<td>100,000</td>
</tr>
<tr>
<td>Bidder 2</td>
<td>2,500,000</td>
<td>Bidder 27</td>
<td>90,000</td>
</tr>
<tr>
<td>Bidder 3</td>
<td>2,150,000</td>
<td>Bidder 28</td>
<td>87,000</td>
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<tr>
<td>Bidder 4</td>
<td>2,000,000</td>
<td>Bidder 29</td>
<td>78,000</td>
</tr>
<tr>
<td>Bidder 5</td>
<td>1,457,639</td>
<td>Bidder 30</td>
<td>77,000</td>
</tr>
<tr>
<td>Bidder 6</td>
<td>1,400,000</td>
<td>Bidder 31</td>
<td>70,000</td>
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<td>Bidder 7</td>
<td>1,155,000</td>
<td>Bidder 32</td>
<td>57,000</td>
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<tr>
<td>Bidder 8</td>
<td>1,000,000</td>
<td>Bidder 33</td>
<td>50,000</td>
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<tr>
<td>Bidder 9</td>
<td>800,000</td>
<td>Bidder 34</td>
<td>45,000</td>
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<tr>
<td>Bidder 10</td>
<td>625,000</td>
<td>Bidder 35</td>
<td>38,000</td>
</tr>
<tr>
<td>Bidder 11</td>
<td>600,000</td>
<td>Bidder 36</td>
<td>32,000</td>
</tr>
<tr>
<td>Bidder 12</td>
<td>562,000</td>
<td>Bidder 37</td>
<td>25,000</td>
</tr>
<tr>
<td>Bidder 13</td>
<td>500,000</td>
<td>Bidder 38</td>
<td>20,000</td>
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<td>Bidder 39</td>
<td>15,000</td>
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<td>Bidder 15</td>
<td>425,000</td>
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<td>Bidder 16</td>
<td>420,000</td>
<td>Bidder 41</td>
<td>11,000</td>
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<td>Bidder 19</td>
<td>304,000</td>
<td>Bidder 44</td>
<td>8,000</td>
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<td>Bidder 20</td>
<td>250,000</td>
<td>Bidder 45</td>
<td>3,000</td>
</tr>
<tr>
<td>Bidder 21</td>
<td>200,000</td>
<td>Bidder 46</td>
<td>2,000</td>
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<td>Bidder 22</td>
<td>190,000</td>
<td>Bidder 47</td>
<td>1,000</td>
</tr>
<tr>
<td>Bidder 23</td>
<td>109,000</td>
<td>Bidder 48</td>
<td>1,000</td>
</tr>
<tr>
<td>Bidder 24</td>
<td>108,000</td>
<td>Bidder 49</td>
<td>1,000</td>
</tr>
<tr>
<td>Bidder 25</td>
<td>100,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C. DISPERSION OF BIDS IN AUCTION 60

Bids were submitted by 34 Compliance-Oriented Entities and 17 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. Five Compliance-Oriented Entities and nine Investors submitted bids for a large quantity of allowances (i.e., at least 1 million tons). Overall, Compliance-Oriented Entities accounted for 42 percent of the quantity of allowances for which bids were submitted. The quantity of allowances for which bids were submitted was 1.9 times the Initial Offering. In the previous auction, the quantity of allowances for which bids were submitted was 2.4 times the Initial Offering.

The bid quantities were widely distributed among the 51 bidders. The concentration of bids, using the Herfindahl-Hirschman Index (“HHI”), was relatively low at 681. 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-url)
D. SUMMARY OF BID PRICES IN AUCTION 60

Bids were submitted across a wide range of prices in the auction and the clearing price of $12.73 was relatively consistent with average bid prices submitted.

The following table reports several statistics regarding the bid prices for bids submitted in Auction 60. 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>$2.50</td>
</tr>
<tr>
<td>Maximum</td>
<td>$25.00</td>
</tr>
<tr>
<td>Average (Median)</td>
<td>$12.80</td>
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<tr>
<td>Average (Mean)</td>
<td>$11.92</td>
</tr>
<tr>
<td>Clearing Price:</td>
<td>$12.73</td>
</tr>
</tbody>
</table>
E. NAMES OF POTENTIAL BIDDERS IN AUCTION 60

In accordance with Sections 2.8 and 3 of the Auction Notice for CO2 Allowance Auction 60, the Participating States are releasing the names of Potential Bidders in Auction 60. The states defined potential bidders as: “Each Applicant that has been qualified and submitted a complete Intent to Bid.” The list of 74 Potential Bidders is as follows:

Anew Environmental, LLC
Astoria Energy, LLC
BP Products North America Inc.
Buchanan Generation
Caithness Long Island, LLC
Calpine Energy Services, LP
Canadian Imperial Bank of Commerce
Carbon Lighthouse Association
Citadel Energy Marketing LLC
City of Vineland
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
Delaware City Refining Company, LLC
Delaware Municipal Electric Corp.
DTE Energy Trading, Inc.
Dynegy Marketing and Trade, LLC
East Coast Environmental, LLC
Edgewood Energy, LLC
EFS Parlin Holdings, LLC
Elbow River Marketing LTD.
Empire Generating Co., LLC
Energy Center Dover
Equus Power I, LP
Gen IV Investment Opportunities, LLC
Global Carbon Opportunity (SPV) Fund LLC
Hartree Partners, LP
Hawkeye Energy Greenport
Helix Ravenswood Energy, LLC

Indeck-Corinth Limited Partnership
J. Aron & Company
Jamestown Board of Public Utilities
Kcarbon Holdings LLC
Kendall Green Energy LLC
Kleen Energy Systems, LLC
KMC Thermo, LLC
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 Power Marketing LLC
Ocean State Power, LLC
Old Dominion Electric Cooperative
Pegasus Development Corporation
Pinelawn Power, LLC
Potomac Energy Center, LLC
Power Authority of the State of New York
RBC
Rhode Island State Energy Center, LP
Selkirk Cogen Partners, LP
Shell Energy North America (US), LP
Shoreham Energy, LLC
Statkraft US, 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