
RGGI Inc.



**REPORT ON THE SECONDARY MARKET
FOR RGGI CO₂ ALLOWANCES:
THIRD QUARTER 2009**

Prepared for:

RGGI, Inc., on behalf of the RGGI Participating States

Prepared By:

**POTOMAC
ECONOMICS**

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The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort by participating states to reduce emissions of carbon dioxide (CO₂), a greenhouse gas that causes global warming.

RGGI, Inc. is a non-profit corporation created to provide technical and administrative services to the CO₂ Budget Trading Programs of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

A. INTRODUCTION

The primary market for RGGI allowances consists mainly of the auctions where allowances are initially sold. Once an allowance is purchased in the primary market, it can then be resold in the secondary market. The secondary market for RGGI allowances comprises the trading of physical allowances and financial derivatives, such as futures and options contracts.

The secondary market is important for several reasons. First, it gives firms an ability to obtain allowances at any time during the three months between the RGGI auctions. Second, it provides firms a way to protect themselves against the potential volatility of future auction clearing prices. Third, it provides price signals that assist firms in making investment decisions in markets affected by the cost of RGGI compliance.

This report provides a summary of activity in the secondary market in the third quarter of 2009 and discusses the results of our market power screens. Several patterns have emerged in this period in the secondary market:

- RGGI futures prices declined 25 percent from \$3.25 at the end of the second quarter to \$2.45 at the end of the third quarter.
- The volume of futures trading increased 49 percent from 214 million allowances in the second quarter to 319 million allowances in the third quarter.
- The net transfer of ownership as a result of trading in the secondary market since RGGI allowances have been in circulation increased to 12.5 million by the end of the third quarter. However, the vast majority of allowances held have been acquired through RGGI auctions.
- The number of participants in the market for RGGI allowance derivatives remained relatively constant over the period. 32 firms had significant financial positions in RGGI futures and options contracts at the end of the third quarter of 2009.

We find no evidence of anticompetitive conduct. Participation by a large number of firms is an encouraging sign of competitiveness and efficiency in the secondary market. Nevertheless, we will continue to evaluate the competitiveness of the market.

B. BACKGROUND

The secondary market for RGGI allowances comprises the trading of physical allowances and financial derivatives, such as futures and options contracts. A physical allowance trade occurs when the parties to the transaction register the transfer of ownership in RGGI's CO₂ Allowance Tracking System ("COATS"). Futures, options, and other financial derivatives are called "exchange-traded" when they are traded on a public exchange, and are called "over-the-counter" ("OTC") when they are not traded on one of the public exchanges. Many financial derivatives eventually result in the transfer of physical allowances (i.e., the transfer is registered in COATS), but this may occur months or years after the parties enter into a transaction.

Standard futures and options contracts for RGGI allowances are traded on two public exchanges: the Chicago Climate Futures Exchange ("CCFE") and the Green Exchange, an initiative of the New York Mercantile Exchange ("NYMEX"). Three categories of standard contracts are traded on these public exchanges:

- **Futures** – Under these contracts, two parties agree to exchange a fixed number of allowances of a certain vintage year at a particular price at a specific point in the future (called the "delivery month"). At the end of the delivery month, the contracted number of allowances must be physically transferred to the buyer's account in the COATS registry and funds must be transferred to the seller. The vintage year refers to the compliance year of the allowance that is to be transferred. One standard futures contract equals 1,000 RGGI allowances.
- **Call Options** – Call options give the purchaser the option to buy a fixed number of allowances of a certain vintage year at a particular strike price at any time prior to the expiration date. For example, suppose a firm holds a call option with a 2009 vintage year, \$5 strike price, and June 2009 expiration date. If the price of the corresponding futures contract rose to \$5.75, the firm could exercise the option to buy allowances at \$5 and immediately sell them at \$5.75. Alternatively, if the price of the futures contract stayed below \$5, the firm would let the option expire without exercising it. One standard options contract can be exercised for 1,000 RGGI allowances.
- **Put Options** – Put options are similar to call options but they give the purchaser the option to *sell* a certain number of allowances of a particular vintage year at a specified strike price any time prior to the expiration date.

Futures and options contracts are important because they allow firms to manage risks associated with unforeseen swings in commodity prices. Futures allow firms to lock-in the prices of future purchases or sales. Options allow firms to limit their exposure to price volatility. Call options protect the purchaser if the price of the commodity increases, while put options protect the purchaser if the price of the commodity decreases. Although options provide less certainty than futures contracts, they usually require less financial security, making them more attractive to some firms.

Public exchanges are attractive to firms that need a simple way to trade standard products. Moreover, public exchanges effectively eliminate the risk of default by counter-parties, since the exchange constantly monitors the account holdings of each participant to ensure that they have posted sufficient financial security to meet their obligations.¹

OTC trading is attractive to firms that prefer contracts with non-standard provisions. Firms with on-going business relationships may have other ways to manage the risk of default by the other party.² Compliance entities may prefer to buy RGGI allowances bundled with other goods and services from their fuel suppliers or operations service providers. The OTC market allows parties to create contracts specifically tailored to their needs. In general, much more information is available about trading on public exchanges than trading in the OTC market.

¹ A futures contract requires parties with an open interest to post financial assurance in an account with the exchange until the contract reaches expiration. The exchange continually withdraws and deposits funds according to changes in the prices of the contracts in which the party has interest. For example, if a firm buys a contract for 1,000 allowances at \$3.50/allowance, the firm must put \$3,500 in an account (or whatever share of the entire liability the exchange requires). If the futures price declines to \$3/allowance, the exchange transfers \$500 from the firm's account (to the account of a firm with a short position), and the firm is only required to keep \$3,000 in the account. At the end of the delivery month, allowances are exchanged for funds according to the closing price on the last day of the month.

² For instance, firms may enter into forward contracts rather than futures contracts. The primary difference between a futures contract and a forward contract is that a futures contract typically requires parties with an open interest to post financial assurance which the exchange draws upon or adds to until the contract reaches expiration, while a forward contract requires that all financial settlement occur at expiration.

C. SUMMARY OF PRICES

This section of the report summarizes prices in the secondary market for RGGI allowances during the third quarter of 2009. The first figure shows the transaction prices of actual allowances and futures contracts for allowances, while the second figure shows the prices of options contracts for allowances. For context, the figures in this section also show prices from June 2009 through the first full week of October 2009 when settlement was completed for futures contracts for September 2009 delivery.

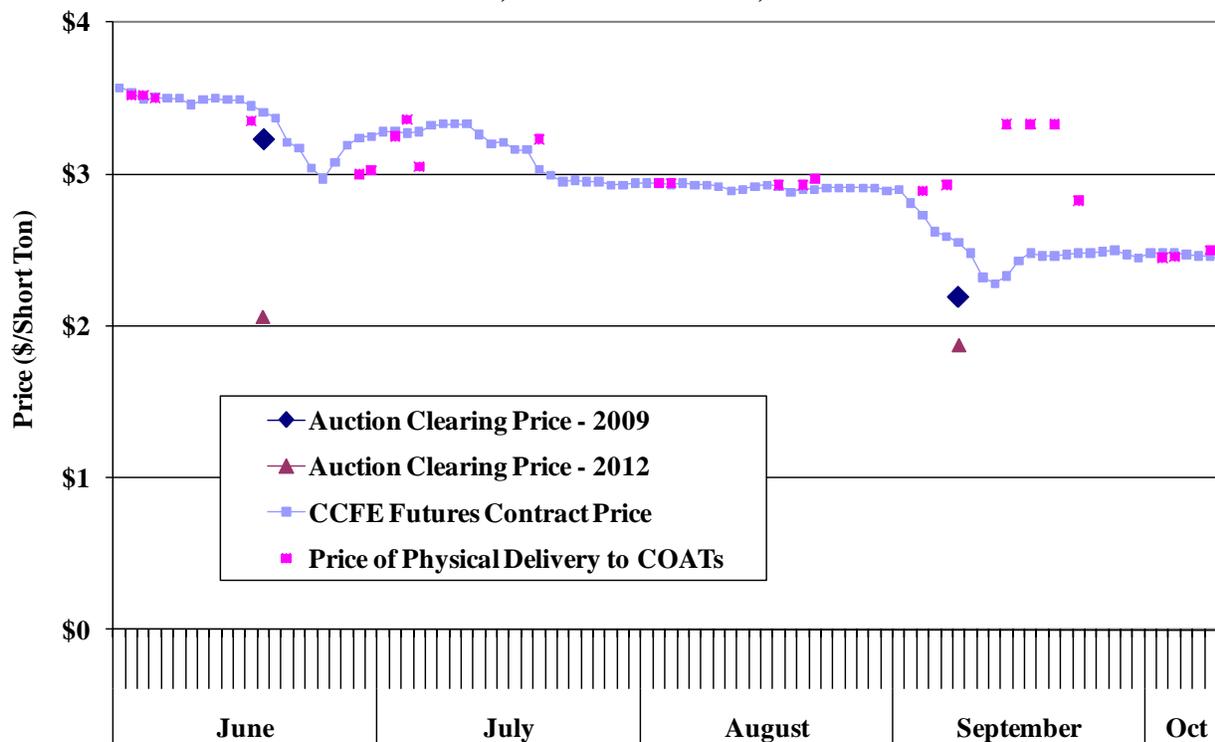
Figure 1 summarizes prices in the secondary market during the period. The light blue line shows the closing price on each trading day of the CCFE futures contract with delivery at the end of the month.³ Futures prices are not shown for the Green Exchange where very few contracts have been traded thus far. The squares show the volume-weighted average price of physical deliveries to COATS on each day when a trade was reported and where the parties recorded the transaction price.⁴ For comparison, Figure 1 also shows the clearing prices in the RGGI auctions held on June 17 and September 9.

Information about the value of RGGI allowances comes from the trading of standard futures contracts on the CCFE. For the period shown in Figure 1, the daily closing price for CCFE futures contracts averaged \$2.95. The daily closing price fell 32 percent over the period from a maximum of \$3.57 on June 1 to \$2.42 on October 9, and it reached a minimum of \$2.28 in the week following the auction on September 9. CCFE futures prices were relatively constant during most of the period, although there were significant swings in price in the days around the June 17 auction, one week in mid-July, and the September 9 auction.

³ For instance, in July, the price of the futures contract for July 2009 delivery is shown.

⁴ Parties are required to report the transaction price if there is an underlying financial transaction related to the transfer of allowances between accounts.

**Figure 1: Prices in the Secondary Market for RGGI Allowances
June 1, 2009 to October 9, 2009**



Sources: Auction clearing prices are available at "www.rggi.org/co2-auctions/results", CCFE futures contract prices are available at "www.ccf.com/mktdata_ccfe/futuresSummary.jsf?symbol=rggi", and the prices of physical deliveries to COATs are based on information in COATs available at "<https://rggi-coats.org/eats/rggi/>".

The historic volatility of CCFE futures prices has continued to fall since its inception in August 2008. The average daily change (up or down) in the closing price has fallen from \$0.09/day in the fourth quarter of 2008 to \$0.06/day in the first quarter of 2009, \$0.04/day in the second quarter, and \$0.03/day in the third quarter.

The clearing prices in the June 17 and September 9 auctions for the 2009 vintage allowances were lower than CCFE futures prices.⁵ Relative to CCFE futures prices, allowances were sold at a 5 percent discount in the June auction and a 14 percent discount in the September auction.

⁵ We also reviewed OTC transaction prices reported by Argus, Platts, and Point Carbon, which have been very consistent with the CCFE futures prices for comparable contracts. Point Carbon publishes an OTC price assessment weekly in "Carbon Market North America." Argus and Platts collect OTC data that is available by subscription.

CCFE futures prices fell from \$3.49 two days before the June auction to \$2.97 one week after the auction before returning to a level slightly higher than the auction clearing price. Similarly, CCFE futures prices fell from \$2.90 one week before the September auction to \$2.28 three days after the auction before returning to a level slightly lower than the auction clearing price.

Figure 1 also shows the clearing prices for the 2012 vintage allowances that were sold in the June 17 and September 9 auctions. The 2012 vintage allowances cleared at a 36 percent discount to the 2009 vintage allowances in the June auction and a 15 percent discount in the September auction. During the period shown, there were no trades of CCFE futures contracts for 2012 vintage allowances.

The prices of physical deliveries reported to COATS have been generally consistent with the prices reported by the CCFE. This is particularly true for the physical deliveries to COATS that result from the expiration of the previous month's futures contract. Several business days after futures contracts reach expiration, allowances are exchanged for funds according to the closing price on the last day of the expiration month.^{6,7} However, in some cases, the prices of physical deliveries to COATS have been substantially higher or lower than prices on the CCFE. Such cases can occur when the delivery results from: settlement of a forward contract signed at an earlier date when the futures price was higher or lower,⁸ the exercise of an option with a strike price substantially higher or lower than the futures price, or settlement of a contract bundling the

⁶ Physical deliveries to COATS generally occur on the third business day following the expiration day of the futures contract. For instance, contracts for September 2009 delivery resulted in transfers in COATS on October 5, 2009.

⁷ A futures contract requires parties with an open interest to post financial assurance in an account with the exchange until the contract reaches expiration. The exchange continually withdraws and deposits funds according to changes in the prices of the contracts in which the party has interest. For example, if a firm buys a contract for 1,000 allowances at \$3.50/allowance, the firm must put \$3,500 in an account (or whatever share of the entire liability the exchange requires). If the futures price declines to \$3/allowance, the exchange transfers \$500 from the firm's account (to the account of a firm with a short position), and the firm is only required to keep \$3,000 in the account.

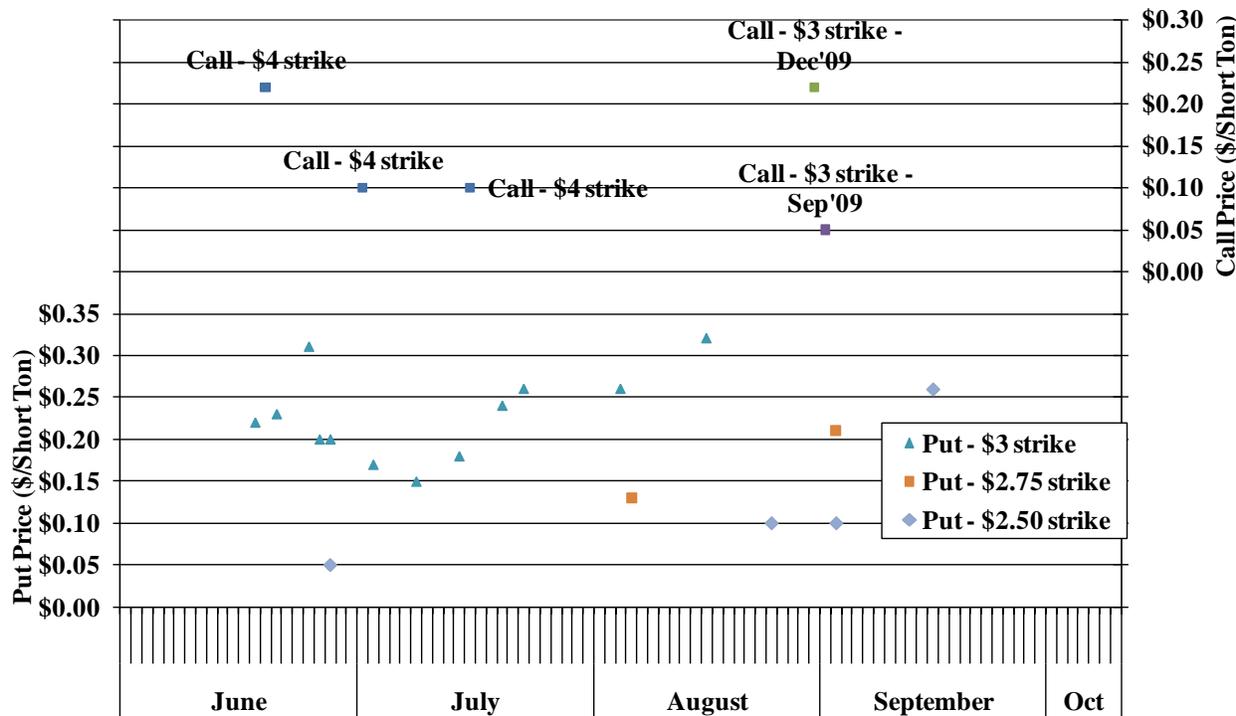
⁸ The primary difference between a futures contract and a forward contract is that a futures contract typically requires parties with an open interest to post financial assurance which the exchange draws upon or adds to until the contract reaches expiration, while a forward contract requires that all financial settlement occur at expiration.

sale of allowances with additional services. Hence, the usefulness of the transaction prices reported in COATS is limited by the fact that transferring parties do not necessarily report all of the important details related to the transaction.

Figure 2 examines the clearing prices of options contracts that were traded during the study period. The clearing prices of options contracts are important because they provide insight about how the market expects the price of the underlying commodity to behave. The price of an option depends on two factors: (i) the expected value of the underlying commodity relative to the strike price of the option, and (ii) the expected volatility of the underlying commodity over the period before the expiration date. When call option price decreases coincide with put option price increases, it signals a decrease in the expected price of the underlying commodity. Conversely, when call option prices and put option prices move in the same direction, it signals a change in the expected volatility of the underlying commodity price.

Figure 2 shows the clearing prices of six options contracts on days when the contracts traded from June 1 to October 9, although a total of 20 different options contracts were traded during the period. Figure 2 illustrates how option prices vary by the strike price and the expiration date and how they respond to news affecting the outlook for RGGI allowances. The top half of the figure shows the prices of three call options, two with a strike price of \$3.00 and one with a strike price of \$4.00. The bottom half of the figure shows the prices of three put options, one with a strike price of \$2.50, one with a strike price of \$2.75, and one with a strike price of \$3.00. One of the call options with a \$3.00 strike price has September 2009 expiration, while the other five options contracts have December 2009 expiration. The trades shown in Figure 2 account for 62 percent of the volume of call options and 64 percent of the volume of put options traded during the period.

**Figure 2: Prices of Put and Call Options for RGGI Allowances
June 1, 2009 to October 9, 2009**



Source: Options prices are available at "www.ccf.com/mktdata_ccfe/optionsSummary.jsf?symbol=rggi".

Figure 2 shows the importance of the strike price to the value of an option. For an option with a particular expiration date, a lower strike price makes a call option more valuable and a put option less valuable. For example, two put options contracts with December 2009 expiration traded on June 26. The put option contract with a strike price of \$3.00 traded at \$0.20, a large premium over the put option contract with a strike price of \$2.50, which traded at \$0.05.

The expiration date of an option also greatly affects its value. The options with the earlier expiration date (e.g., September 2009) are substantially less valuable than the comparable options with a later expiration date (e.g., December 2009). For example, on August 31, a call option contract with a strike price of \$3.00 and December 2009 delivery cleared at \$0.22, while on September 1, a call option with the same strike price and September 2009 expiration cleared at \$0.05. Part of the reason for the difference in clearing prices of the two contracts was associated with their expiration dates.

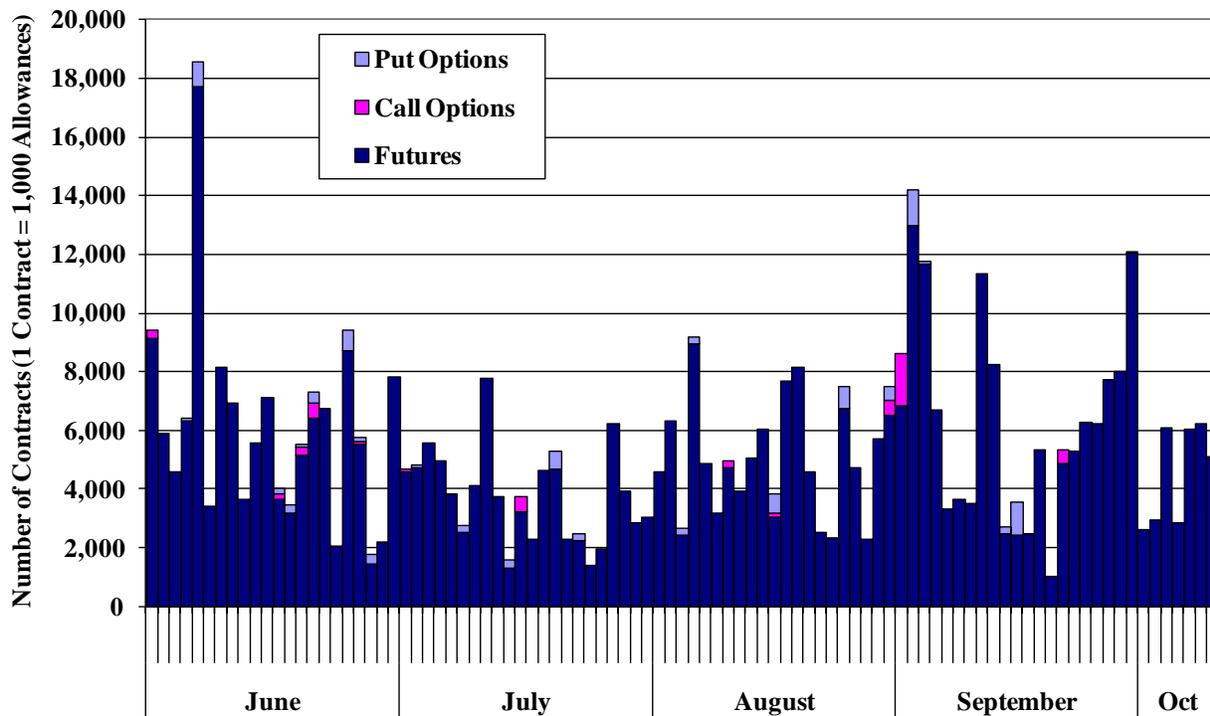
Overall, the options prices in Figure 2 reflect the marked decline in futures prices during the period. Early in the period on June 18, a call option with a \$4.00 strike price traded at \$0.22, the same price level as a call option with a \$3.00 strike price on August 31. Likewise, in mid-June, a put option with a \$3.00 strike price traded at \$0.22, and by mid-September, a put option with a \$2.50 strike price traded at \$0.26. Indeed, it is notable that the most traded options contracts in June were a call with a \$4.50 strike price and a put with a \$3.00 strike price, and in September, the most traded options contracts were a call with a \$3.00 strike price and a put with a \$2.50 strike price, resulting from the significant decline in expected allowance prices.

D. VOLUMES AND OPEN INTEREST

This section evaluates the volume of trading and the open interest in exchange-traded futures and options as well as transfers of allowances between unaffiliated parties that are reflected in COATS. Open interest is the net amount of futures or options contracts that have been traded, but have not reached the time of delivery, expired, or been exercised. For example, if Firm A sells 100 contracts to Firm B, Firm A will have a short position of 100 contracts, Firm B will have a long position of 100 contracts, and the total open interest will be 100 contracts. Hence, the total open interest can be determined by summing across all of the long positions of market participants or by summing across all of the short positions.

Figure 3 shows the volume of trading on the CCFE each day for futures and options.

**Figure 3: Volume of Trading of CCFE Futures and Options
June 1, 2009 to October 9, 2009**



Sources: Options volumes are available at “www.ccf.com/mktdata_ccfe/optionsSummary.jsf?symbol=rggi” and futures volumes are available at “www.ccf.com/mktdata_ccfe/futuresSummary.jsf?symbol=rggi”.

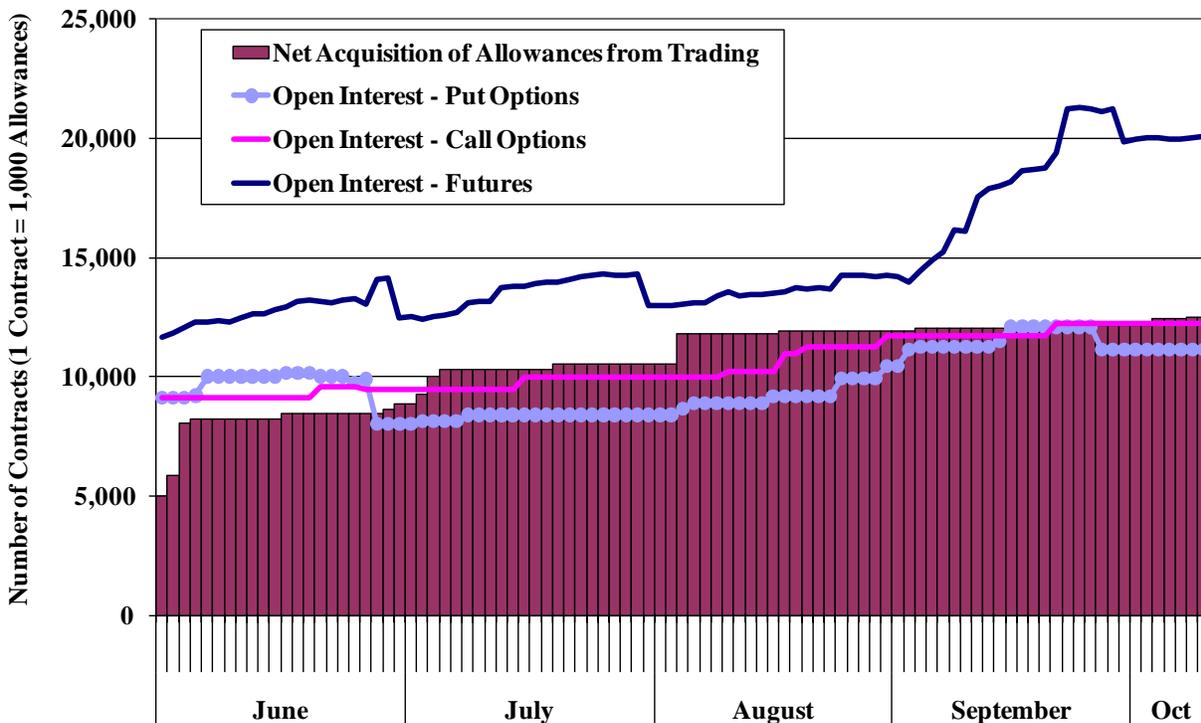
The volume of trading in futures contracts was relatively constant during the period. The average daily volume was 6.0 million allowances in June and 6.3 million allowances in September. The total volume of futures trading increased from 214 million allowances in the second quarter to 319 million allowances in the third quarter. The third quarter volume was higher than the second quarter volume because volume rose rapidly during the second quarter and stayed more constant from June to September. The volume traded in the third quarter was much larger than the number of allowances auctioned (31 million) in the same period. The most liquid futures contract is the 2009 vintage contract for December 2009 delivery, accounting for 75 percent of the volume traded in the third quarter of 2009. During this period, the end of month contract (e.g., the July 2009 contract during July) accounted for 19 percent of the volume, while other contracts accounted for the remaining 6 percent.

The volume of trading in options contracts decreased from an average daily amount of 320 contracts in the second quarter to 160 contracts in the third quarter. Of the options traded during the third quarter of 2009, 22 percent were call options with a strike price of \$3.00, and 56 percent were put options with strike prices of \$2.50, \$2.75, or \$3.00.

Figure 4 shows the open interest on each day for the futures and options contracts shown in the previous figure. Figure 4 also shows the net acquisition of allowances in the COATS registry *as a result of transactions between unaffiliated firms*.⁹ The net acquisition of allowances is smaller than the gross volume of transactions between unaffiliated firms, because the net acquisition offsets sales against purchases for each firm. For example, if a Firm A purchases 100,000 allowances but then sells 20,000 allowances, the figure would show a net acquisition by Firm A of 80,000 even though the volume of transfers would be 120,000. This is an important distinction because the net acquisition of allowances from trading since RGGI allowances have been circulating was 12.5 million as of October 9, while the gross volume of trading between unaffiliated firms was 19.4 million allowances.

⁹ This excludes the majority of allowances, which are held by firms that purchased them directly in the auction or received them through allocations by one of the Participating States.

**Figure 4: Open Interest in CCFE Futures and Options and Net Acquisition of Allowances from Trading
June 1, 2009 to October 9, 2009**



Sources: Physical holdings of allowances are based on information in COATS, open interest in options is available at "www.ccfec.com/mktdata_ccfe/optionsSummary.jsf?symbol=rggi", and open interest in futures is available at "www.ccfec.com/mktdata_ccfe/futuresSummary.jsf?symbol=rggi".

The open interest shows that the positions of firms trading futures and options increased over the period. In Figure 4, the first significant decline in the open interest in futures resulted from the delivery of futures contracts with a delivery month of June 2009. On the first three days in July, the delivery of these futures contracts led to a rise in the allowance holdings registered in COATS as a result of trading. The delivery of the May futures contract (on June 2 & 3) and of the July futures contract (on August 5) accounts for most of the remainder. Otherwise, few allowance trades between unaffiliated firms have been registered in COATS.

Although the total open interest in futures contracts briefly declined following the delivery of the June, July, and September contracts, the total open interest increased from 12.5 million after delivery of the June contract to 20.0 million after delivery of the September contract. Most of the increase in open interest in futures contracts occurred between September 1 and September 23, a period when futures prices fluctuated substantially, ranging between \$2.90 and \$2.28. As

of October 9, 90 percent of the open interest in RGGI futures contracts was for the benchmark contract (i.e., the 2009 vintage contract for December 2009 delivery). Another 9 percent of the open interest was for the 2009 vintage contract for December 2010 delivery.

The net acquisition of allowances as a result of transactions between unaffiliated firms increased from 10.3 million after delivery of the June 2009 contract to 12.5 million after the delivery of the September 2009 contract. The transfers between COATS accounts resulted primarily from the delivery of futures contracts on the CCFE in the third quarter of 2009.

The sum of the open interest in futures contracts and the net acquisition of allowances (as registered in COATS) provides a sense of the overall amount of RGGI allowances that have been acquired through the secondary market. The sum of these two quantities rose from 22.8 million allowances after delivery of the June 2009 contract to 32.5 million allowances after delivery of the September 2009 contract. The increase in this sum is substantial, but still modest compared with the 141 million allowances that have been acquired from RGGI auctions through September 2009. Hence, the auctions are still the principal means by which firms have acquired control of RGGI allowances (assuming that open interest in OTC contracts is modest).

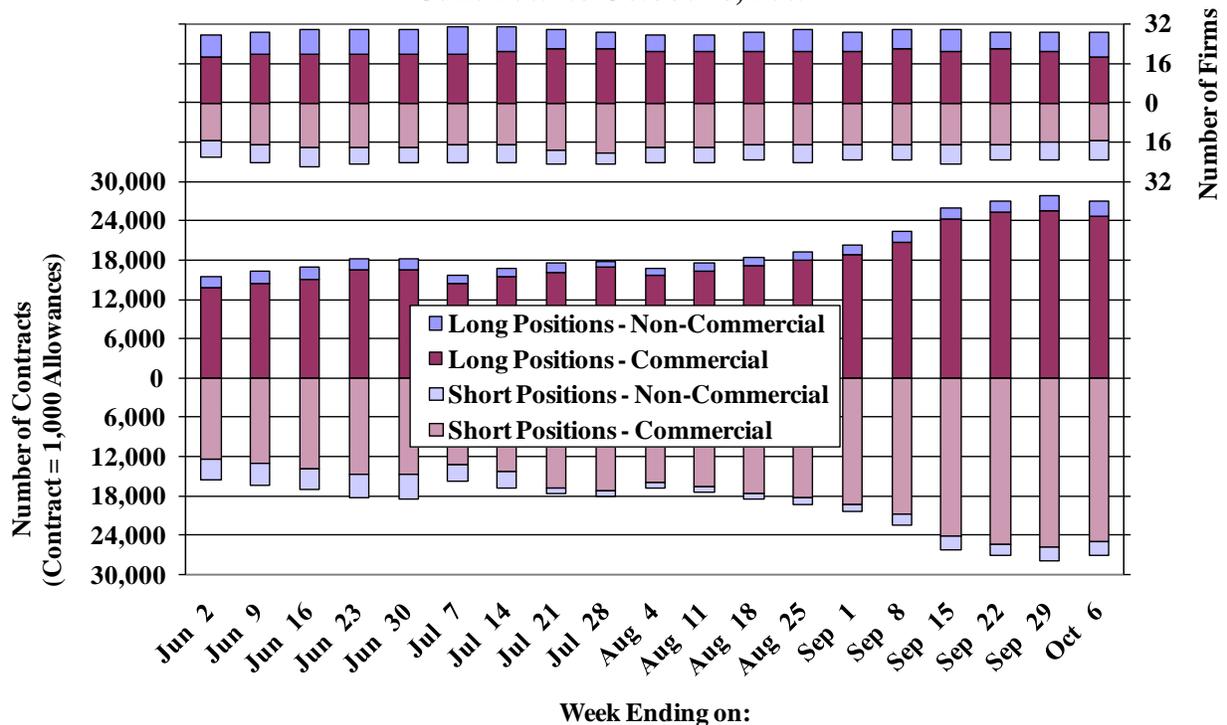
The open interest in options rose modestly during the period as the expiration of existing contracts kept pace with the increase in open interest from new trades. Nearly 2 million put option contracts with strike prices of \$3.00 and \$3.25 were exercised or reached expiration on June 26. This suggests that some firms with long positions were seeking insurance against an unexpectedly low clearing price in the June 17 auction. The open interest in put options still grew during the period as firms purchased put options mostly with strike prices between \$2.50 and \$3.00.

Figure 5 and Figure 6 provide additional information about the firms trading CCFE futures and options from the weekly Commitment of Traders (“COT”) reports, published by the Commodity Futures Trading Commission (“CFTC”). Each day, firms with an open interest of 25 contracts or more are required to report their positions to the CFTC. The CFTC categorizes each firm as Commercial if it engages in trading primarily to supply its own need for allowances or Non-Commercial if it trades for another purpose. Hence, compliance entities are generally designated

as Commercial and non-compliance entities are generally designated as Non-Commercial. Each Tuesday, the CFTC publishes a summary of the long and short positions of participants in the market.

Figure 5 summarizes the long and short positions of Commercial and Non-Commercial firms on a weekly basis. It shows the number of firms with long positions and the number of firms with short positions. It also shows the aggregate size of all long positions and the aggregate size of all short positions. Since each contract has a buyer and a seller, the total open interest in the market is equal to the total of all long positions and it is equal to the total of all short positions. The total open interest implied by the amount of long and short positions in Figure 5 is smaller than the sum of open interest in futures and options in Figure 4, because some firms buy or sell options contracts that offset or have a discounted impact on their long or short positions.

**Figure 5: Open Interest in the CCFE Futures and Options
June 2009 to October 6, 2009**



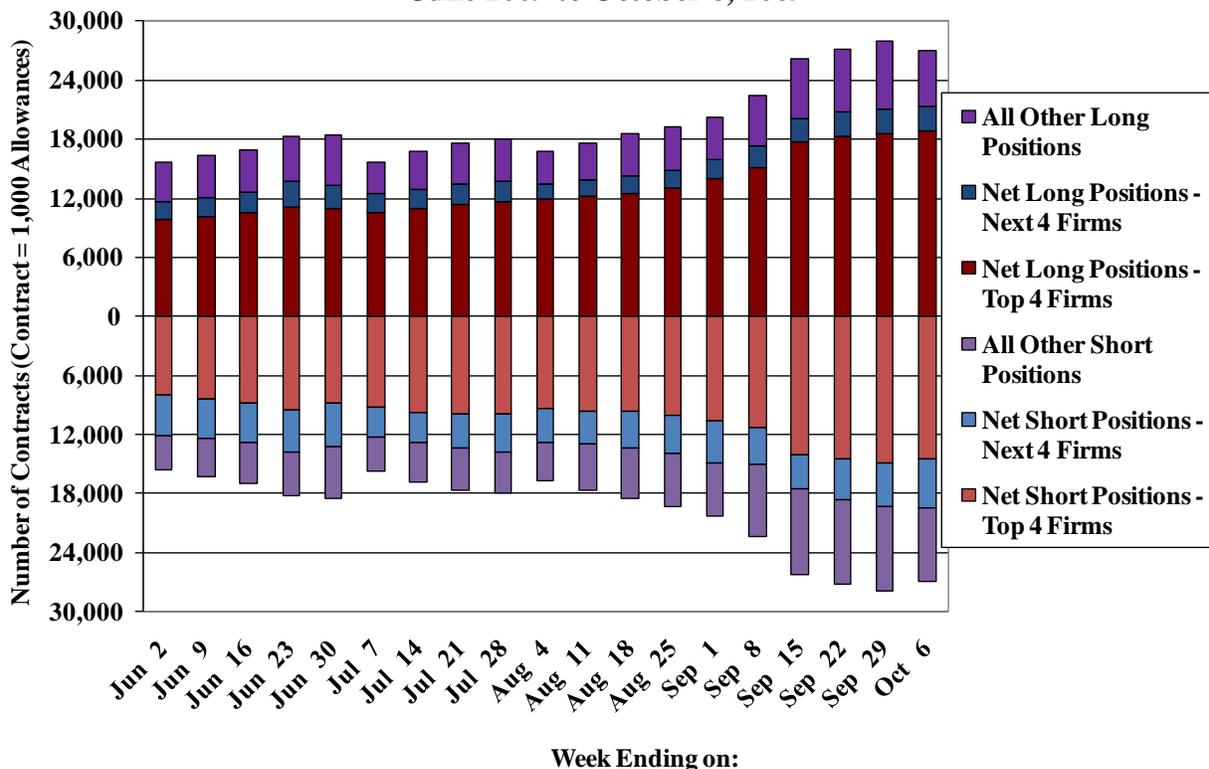
Source: The CFTC's Commitment of Traders reports which are available at
["www.cftc.gov/marketreports/commitmentsoftraders/index.htm"](http://www.cftc.gov/marketreports/commitmentsoftraders/index.htm)

A substantial number of firms have been active in taking short and long positions (23 and 29 as of October 6). Commercial firms (i.e., compliance entities) account for a large majority of long and short positions. As of October 6, 92 percent of long positions and 92 percent of short positions were held by Commercial firms. The shares held by Commercial firms remained relatively constant during the third quarter of 2009. It is likely that many firms with short positions on the CCFE also hold physical allowances that were purchased in one of the auctions.

Figure 6 summarizes the concentration of open interest in CCFE futures and options combined. The figure reports the net long positions in three categories: (i) the four firms with the largest long positions (see “Top 4 Firms”), (ii) the four firms with the largest long positions not including the Top 4 (see “Next 4 Firms”), and (iii) all other long positions. The net long position is defined as a firm’s long position minus its short position (assuming its long position is larger than its short position). For example, if a firm has purchased 5,000 contracts for December 2009 delivery and sold 1,000 contracts for December 2010 delivery, it has a net long position of 4,000 contracts. The figure also reports the net short positions in three categories: (i) the four firms with the largest short positions (see “Top 4 Firms”), (ii) the four firms with the largest short positions not including the Top 4 (see “Next 4 Firms”), and (iii) all other short positions.

Many firms have open interest in RGGI allowance futures and options, although a small number of firms account for a substantial share of the net long and short positions. The net long positions of the top four firms accounted for 60 to 71 percent of the total long positions during the period and 70 percent on October 6. The net short positions of the top four firms accounted for 48 to 59 percent of the total short positions during the period and 54 percent on October 6. The shares of the top four firms did not change substantially during the general rise in open interest from the week-ending September 1 to the week-ending September 22.

**Figure 6: Concentration of Open Interest in the CCFE Futures and Options
June 2009 to October 6, 2009**



Source: The CFTC's Commitment of Traders reports which are available at ["www.cftc.gov/marketreports/commitmentsoftraders/index.htm"](http://www.cftc.gov/marketreports/commitmentsoftraders/index.htm)

Although the COT reports do not provide firm level information on open interest, they provide an indication of the upper limits of the net long and net short positions of individual firms. On October 6, net long positions of four firms added up to the equivalent of 18.8 million allowances, so the largest net long position of any single firm must be substantially smaller. This information is useful for evaluating the concentration of ownership of RGGI allowances, which is discussed further in Section E.

The preceding figures show that activity in the secondary market continued to be substantial in the third quarter of 2009 based on the volume of trading of standard futures and options contracts. As of October 6, the total open interest in exchange-traded futures and options contracts (on a combined basis) was approximately 27.0 million allowances and the net acquisition of allowances from trading that has been registered in COATS was 12.5 million allowances. However, the total transfer of control of allowances from trading is still far lower

than the 141 million allowances sold in the RGGI auctions through September 2009. Hence, the auctions are still the principal means by which firms have acquired control of RGGI allowances.

E. DISCUSSION OF MARKET MONITORING

As the RGGI Market Monitor, we monitor trading in the secondary market in order to identify anticompetitive conduct. Additionally, the Commodity Futures Trading Commission (“CFTC”) evaluates trading in the secondary market consistent with its role as the regulator of futures and option markets in the U.S.

In any commodity market, one potential concern is that a firm could hoard a substantial share of the supply of a commodity to influence prices or to prevent a competitor from obtaining allowances. Hence, we screen information on the holdings of allowances and allowance-derivatives and the demand for allowances to identify firms that might acquire a position that raises competitive concerns. At this stage, hoarding is not a significant concern for the RGGI allowance market because the amount of allowances in circulation and the open interest in allowance derivatives is small relative to the total supply of allowances. The total supply of allowances that will ultimately be available in the first compliance period (from 2009 to 2011) is more than 560 million. Given that only 151 million allowances are circulating in the secondary market,¹⁰ that the auction rules limit the amount of allowances that can be purchased by a single party, to 25 percent, and that the net transfers between parties in the secondary market have been modest thus far, it is not yet possible for the holdings of any participant to raise potential hoarding concerns.

Another potential competitive issue is that a firm expecting to purchase allowances in the auction might sell a large number of futures contracts in an effort to push the futures price below the competitive level. Such a firm might profit from buying a large number of allowances in the auction at a discount if the bidding in the auction were influenced by the depressed futures price. In a highly liquid market, this strategy would not be profitable because it would have a minimal effect on the futures price. Hence, it is encouraging that the volume of trading was substantial in

¹⁰ 141 million allowances have been dispersed in the first five auctions, and 10 million allowances have been allocated by the states.

the third quarter of 2009 and that the CFTC reports that a substantial number of firms have been taking short and long positions in RGGI futures and options contracts. However, we will continue to monitor for this concern.