



**QUARTERLY REPORT ON THE ELECTRICITY GENERATOR
EMISSIONS LIMITS PROGRAM (310 CMR 7.74):
THIRD QUARTER 2025**

Prepared for:

**Massachusetts Department of Environmental Protection on behalf of the
Commonwealth of Massachusetts**

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A. INTRODUCTION AND SUMMARY

The Massachusetts Department of Environmental Protection (“MassDEP”) implemented its program to limit CO₂ emissions from electricity generators in January 2018. This report provides background on relevant aspects of the program, a summary of market activity through the third quarter of 2025, an overview of emissions and allowance holdings patterns, and discussion of the results of our market power screens.

- CO₂ Emissions versus the Annual Caps: Emissions have risen while the annual caps have fallen over the last two years, leading to a steep decline in the number of allowances banked after each year.
 - ✓ In 2023, the cap was 7.84 million allowances compared to 5.62 million metric tons of emissions. The cap is not scheduled to fall below this level until 2034.
 - ✓ In 2024, the cap was 7.61 million allowances compared to 6.28 million metric tons of emissions. The cap is not scheduled to fall below this level until 2030.
 - ✓ In 2025, the cap is 7.39 million allowances, and January to September emissions went up 0.52 million metric tons in 2025 compared to the same months of the previous year. Emissions totaled 6.80 million metric tons over the 12-month period ending September 2025. The cap is scheduled to fall below this level in 2028.
- Load, Generation, and Emissions Trends: Emissions from covered generation have varied with electricity demand levels.
 - ✓ Generation from covered units increased by 10 percent through August 2025 from the first eight months of previous year, reflecting reduced net imports to Massachusetts.
- CO₂ Allowance Prices and Trading Activity: Prices have increased considerably since the summer of 2024 when MassDEP announced it was considering increasing the auction reserve price from 0.50/metric ton.¹ Since Auction 2025-1 in December 2024, MassDEP has used a reserve price of \$5/metric ton for the current vintage offering.
 - ✓ Prices averaged \$9.45 per metric ton for 133k allowance transfers in 2025, nearly all of which occurred in January or February ahead of the compliance deadline for 2024.
 - ✓ The vast majority of allowance purchases were made through the auctions rather than the secondary market. The eight auctions for 2025 vintage allowances cleared:
 - 369,396 allowances for \$1.75/metric ton in Auction 2024-1 in December 2023,

¹ <https://www.mass.gov/doc/minimum-reserve-price-discussion-document/download>

- 369,396 allowances for \$1.75/metric ton in Auction 2024-2 in March 2024,
 - 369,396 allowances for \$1.25/metric ton in Auction 2024-3 in June 2024,
 - 369,396 allowances for \$5.5/metric ton in Auction 2024-4 in September 2024.
 - 738,792 allowances for \$6.06/metric ton in Auction 2025-1 in December 2024.
 - 738,792 allowances for \$9.3/metric ton in Auction 2025-2 in March 2025.
 - 1,550,944 allowances for \$12/metric ton in Auction 2025-3 in June 2025.
 - 1,550,943 allowances for \$15.03/metric ton in Auction 2025-4 in September 2025.
- ✓ The four offerings of 2026 vintage cleared:
- 358,202 allowances for \$4.99/metric ton in Auction 2025-1 in December 2024,
 - 358,202 allowances for \$6.06/metric ton in Auction 2025-2 in March 2025,
 - 358,202 allowances for \$8/metric ton in Auction 2025-3 in June 2025,
 - 358,202 allowances for \$12/metric ton in Auction 2025-4 in September 2025.
- ✓ The spread between current vintage and future vintage clearing prices ranged between 18 and 35 percent of the current vintage price in the auctions from December 2024 to September 2025.

We evaluate information on the holdings and demand for allowances to identify firms that may have acquired a position that raises competitive concerns. In the current study period, we find no evidence of anti-competitive conduct in the secondary market for allowances, and we find that firms have generally sought to acquire or sell allowances consistent with their expected needs for first nine months of 2025.

B. BACKGROUND

Regulation 310 CMR 7.74 created a cap-and-trade program to reduce carbon dioxide emissions from electricity generating facilities located in Massachusetts beginning in 2018.² Cap-and-trade programs work by setting an aggregate emissions limit for a particular class of emitters and requiring them to acquire a number of allowances sufficient to cover their emissions. Firms that hold allowances can decide whether it is more profitable to use them to cover their emissions or to sell them to an emitter that can use them more efficiently.

Covered compliance entities and emissions are consistent with the Regional Greenhouse Gas Initiative (RGGI) regulation, implemented as 310 CMR 7.70 in Massachusetts. Under 310 CMR 7.74, compliance periods are annual. The Massachusetts Carbon Allowance Registry (“Registry”) is used to track the ownership of allowances. Once an allowance is allocated or purchased in the auction, it can be resold in the secondary market. Participation in the market for allowances is limited to regulated electricity generating facilities.

The secondary market is important for several reasons. First, it gives firms an ability to obtain allowances at any time, while the auctions are relatively infrequent. Second, it provides firms a way to protect themselves against unexpected swings in future prices. Third, it provides price signals that assist firms in deciding how much electricity to produce and in making investment decisions that are affected by the costs of compliance.

The market for Massachusetts allowances has several key elements, which are discussed in this section: the emissions cap, allocations, auctions, banking, program participation, and compliance.

Annual Emissions Cap

The program’s annual emissions cap was set at 9,149,979 metric tons for 2018, which was the first year of program implementation. The annual cap fell to 8,731,175 metric tons in 2019, and

² <https://www.mass.gov/guides/electricity-generator-emissions-limits-310-cmr-774>

it declines by 223,876 metric tons in each subsequent year, eventually reaching 1,791,019 metric tons in 2050.³ The 2024 cap is 7,611,795, and the 2025 cap is 7,387,919.

Allowance Allocations

One hundred percent of the 2018 vintage allowances were allocated to individual generators, including new facilities. For the 2019 compliance year, the MassDEP allocated 75 percent of allowances to individual generators and auctioned the remaining allowances.⁴ For the 2020 compliance year, the MassDEP allocated 50 percent and auctioned the remainder. Starting with the 2021 compliance year allowances, all allowances are distributed by auction, subject to the banking adjustment described below.

Banking of Allowances

In August 2018, the MassDEP adopted changes to the provisions for banked allowances (i.e., allowances held by covered entities after the compliance deadline for a given year) stating that if the number of banked allowances after a particular year exceeds 223,875, the number of allowances distributed in the subsequent year will be adjusted downward by the difference between the number of banked allowances and 223,875. As the cap declines by 223,876 metric tons each year, this approach ensures that each year's emissions are less than the previous year's cap.

For instance, after 2021 compliance obligations were satisfied, 2,652,320 allowances were held in facility accounts on April 1st, 2022. Thus, the number of allowances to be distributed for the 2022 compliance year was adjusted down by 2,428,445 (which equals the 2,652,320 allowances held after 2021 minus the limit of 223,875 allowances). Consequently, the adjusted emissions cap for the 2022 compliance year was 8,283,422 metric tons (including 2,652,320 banked allowances and 5,631,102 vintage 2022 allowances sold in auctions 2022-1 through 2022-4).

³ 310 CMR 7.74(5)(a)

⁴ In this report, the term "allowance" refers to allowances that can be used to comply with 310 CMR 7.74 only. These allowances cannot be used to comply with requirements of the Regional Greenhouse Gas Initiative, which is implemented in Massachusetts pursuant to a different regulation, 310 CMR 7.70.7

The same calculation was used to determine the adjusted emissions cap for 2025 and the number of 2025 allowances to be sold in Auctions 2025-3 and 2025-4. In 2025, the post-compliance holdings amount was 1,554,739, so the number of allowances to be auctioned for the 2025 compliance year was adjusted down by 1,330,864 (which equals the 1,554,739 allowances held after 2024 minus the limit of 223,875 allowances).

Auctions

Twenty percent of the 2026 vintage allowances were auctioned in Auction 2025-1 through 2025-4. The MassDEP plans to distribute the rest of allowances for the 2026 compliance year through four quarterly auctions:

- On December 10, 2025: 10 percent of the 2026 unadjusted emissions limit will be offered (716,404 allowances).
- In March 2026: 10 percent of the total 2026 unadjusted emissions limit will be offered (716,404 allowances).
- In June 2026: 50 percent of the allowances remaining after the first two auctions and the adjustment for allowances banked after 2025 will be offered. Publication of the final amount will occur following the adjustment for banking, which will occur during the 2025 compliance process in March 2026.
- In September 2026: All remaining 2026 allowances will be offered for sale.

In addition to 2026 vintage allowances, 5 percent of the 2027 annual cap (which equals 347,008 allowances for the 2027 vintage) will be offered in each of the four auctions listed above.

Participants in the Program

Participation in the program, including the auctions, is restricted to the owners and operators of covered facilities. The term “regulated entity” is used in the Registry to refer to the highest level of facility ownership, and in the case of shared ownership groups together several facilities.⁵ A list of facilities and associated regulated entities is available to the public at <https://macar.apx.com/> (select “Reports”).

⁵ For example, Medway Station and Mystic receive allocations separately, but they are both owned by Exelon, so for tracking and market monitoring purposes their demand is aggregated.

Compliance

On March 1st of each year, every generating facility’s Registry account is required to hold sufficient allowances to satisfy obligations from the prior calendar year. Facilities that do not hold sufficient allowances may qualify for “emergency deferred compliance.” Under emergency deferred compliance, the compliance obligations from emissions that occurred during a MLCCP#2 designated period can be deferred to the following year.⁶ However, those emissions are required to be offset on a two for one basis in that following year.⁷ For example, if a facility deferred 1,000 allowances for 2021 compliance, they are required to hold a number of allowances for 2022 compliance equal to their 2022 emissions plus 2,000 additional allowances for their emergency deferred compliance from the previous year. This provision is intended to provide generators with additional flexibility when they may be needed for system reliability, while still discouraging generators from exceeding the cap in a given year. Thus, it is unlikely that facilities will use this option under normal circumstances. From January through September 2025, ISO New England has declared MLCCP#2 periods for a total of 77.5 hours.

By April 1st, the Department will deduct allowances from each generating facility’s registry account; first to address any deferred obligations, then to meet the facility’s obligations from the previous calendar year. For each year from 2018 to 2024, allowance deductions were carried out successfully and all facilities met their obligations without the use of emergency deferred compliance. The Registry tracks current holdings, allowance transfers, and allocations, as well as ownership and representation of each facility or regulated entity.

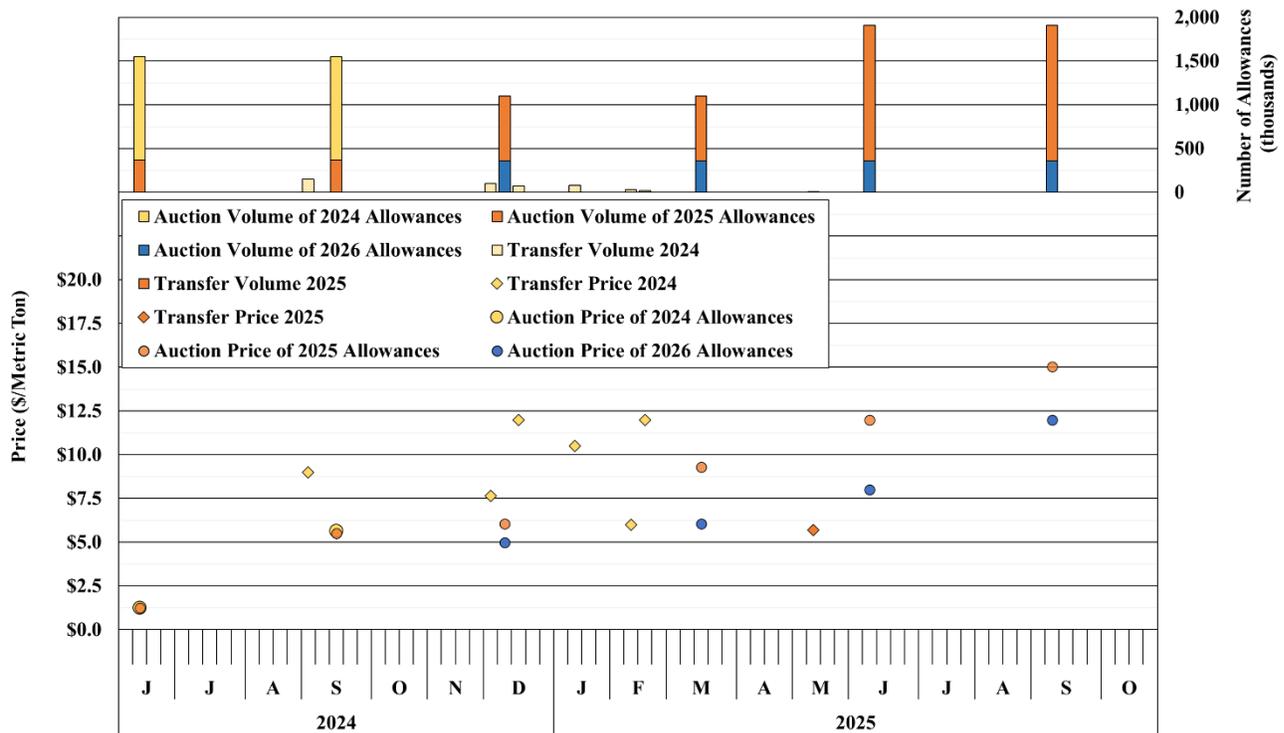
⁶ These are periods when ISO New England has triggered “Master Local Control Center Procedure No.2”

⁷ 310 CMR 7.74(6)(d)

C. SUMMARY OF PRICES AND TRADED VOLUMES

This section evaluates the available information regarding the purchase of allowances in the auctions and transfers in the secondary market for allowances. Figure 1 displays the weekly volumes of allowance transfers and weighted average prices as well as auction results.

Figure 1: Allowance Prices and Volumes⁸



There were four transfers between unaffiliated entities in 2025:

- In January, 80,000 allowances for the 2024 vintage were transferred at \$10.5 per metric ton. In February, 47,668 allowances for the 2024 vintage were transferred at an average of \$8.14 per metric ton. These transactions occurred at a premium over contemporaneous auction clearing prices as regulated entities sought allowances shortly before the compliance deadline for 2024, although the transaction quantities were small relative to the quantities sold at auction.

⁸ Figure 1 shows transfers reported to the registry by the end of October 2025, but since there is no prompt reporting requirement, other transactions may have occurred that have not yet been reported.

- In May, 5,800 allowances for the 2025 vintage were transferred at \$5.69 per metric ton.

In the eight allowance auctions held for 2025 vintage allowances:

- Auction 2024-1 (on December 13) cleared at \$1.75 per metric ton.
- Auction 2024-2 (on March 13) cleared at \$1.75 per metric ton.
- Auction 2024-3 (on June 12) cleared at \$1.25 per metric ton.
- Auction 2024-4 (on September 18) cleared at \$5.50 per metric ton.
- Auction 2025-1 (on December 11) cleared at \$6.06 per metric ton.
- Auction 2025-2 (on March 19) cleared at \$9.30 per metric ton.
- Auction 2025-3 (on June 11) cleared at \$12.00 per metric ton.
- Auction 2025-4 (on September 10) cleared at \$15.03 per metric ton.

In the four allowance auctions held for 2026 vintage allowances:

- Auction 2025-1 (on December 11) cleared at \$4.99 per metric ton.
- Auction 2025-2 (on March 19) cleared at \$6.06 per metric ton.
- Auction 2025-3 (on June 11) cleared at \$8.00 per metric ton.
- Auction 2025-4 (on September 10) cleared at \$12.00 per metric ton.

Figure 1 shows that prices increased considerably over the period shown and that there were relatively few allowance trades in the secondary market. Prices of 2025-vintage allowances generally increased from \$1.25 in June 2024 to more than \$15 in September 2025. September 2024 was the first auction held after MassDEP announced its intention to increase the auction reserve price, and December 2024 was the first auction at which the reserve price for the 2025 vintage was increased to \$5.00 per metric ton (from \$0.50). Bilateral transactions have been infrequent.

There has been a wide dispersion of bid prices in the auctions, reflecting considerable variation among regulated entities in their expectations regarding the value of allowances. This variation in expectations highlights (a) that relatively little information from trading in the secondary market has been available regarding the value of allowances and (b) that some generators earn

high margins on the sale of electricity in some periods due to the wide distribution of hourly prices in the ISO New England market.

In the auctions in which allowances have been sold for both 2025 and 2026 vintages, the clearing prices for the current vintage were at a premium compared to the prices for the future vintage. The margin has ranged between 18 and 35 percent of the current year vintage price. Since unused allowances from a particular compliance year can be banked and are essentially interchangeable with allowances from the following year, the prices of current vintage allowances should never fall below future vintage prices. Given the large quantity of banked allowances after each compliance year, the prices of current vintage and future vintage allowances are expected to converge. However, some margin between current vintage and future vintage prices is expected since holding allowances for an additional year uses a non-trivial amount of working capital of regulated entities.

Allowance purchases for the future vintage are driven partly by regulated entities that have long-term contractual obligations to deliver electricity in a future year and seek to hedge their exposure to fluctuations in input prices. For example, firms are able to hedge exposure to fluctuations in natural gas prices and RGGI (CMR 7.70) allowance prices through liquid futures markets, but no comparable financial hedges exist for Massachusetts (CMR 7.74) program allowances. Consequently, some regulated entities may be setting aside current vintage allowances as a hedge for obligations in future years. Therefore, the sale of future vintage allowances gives regulated entities opportunities to buy allowances for hedging, thereby reducing demand for current vintage allowances.

D. EMISSIONS AND ALLOWANCE HOLDINGS

Allowance prices are generally driven by the fundamentals of supply and demand, which we evaluate by reviewing patterns of emissions, allocations, and forecasted holdings of firms. Table 1 and Figure 2 evaluate emissions and electricity supply over the last three years, while Figure 3 compares allowance holdings to emissions by regulated entity.

Table 1 summarizes electricity supply and emissions through part of 2025 compared to the same time periods in 2023 and 2024. Data is provided for regulated facilities by type: combined cycle units running on liquified natural gas (“LNG”), all other combined cycle units (“CC”), gas/oil-fired steam turbines (“ST”), and combustion turbine peaking units (“CT”). The table shows the supply of electricity from other non-regulated sources, including: other non-program units such as renewables and waste burners, and net generation from the commercial and industrial sectors (“C&I”). Two different time horizons are specified for generation and emissions due to data availability issues. Generation data is provided through August of each year while emission estimates extend through September. Figure 2 summarizes the same categories of information as Table 1 but on a monthly basis. The figure also reports emissions for entities subject to the cap under 310 CMR 7.74.

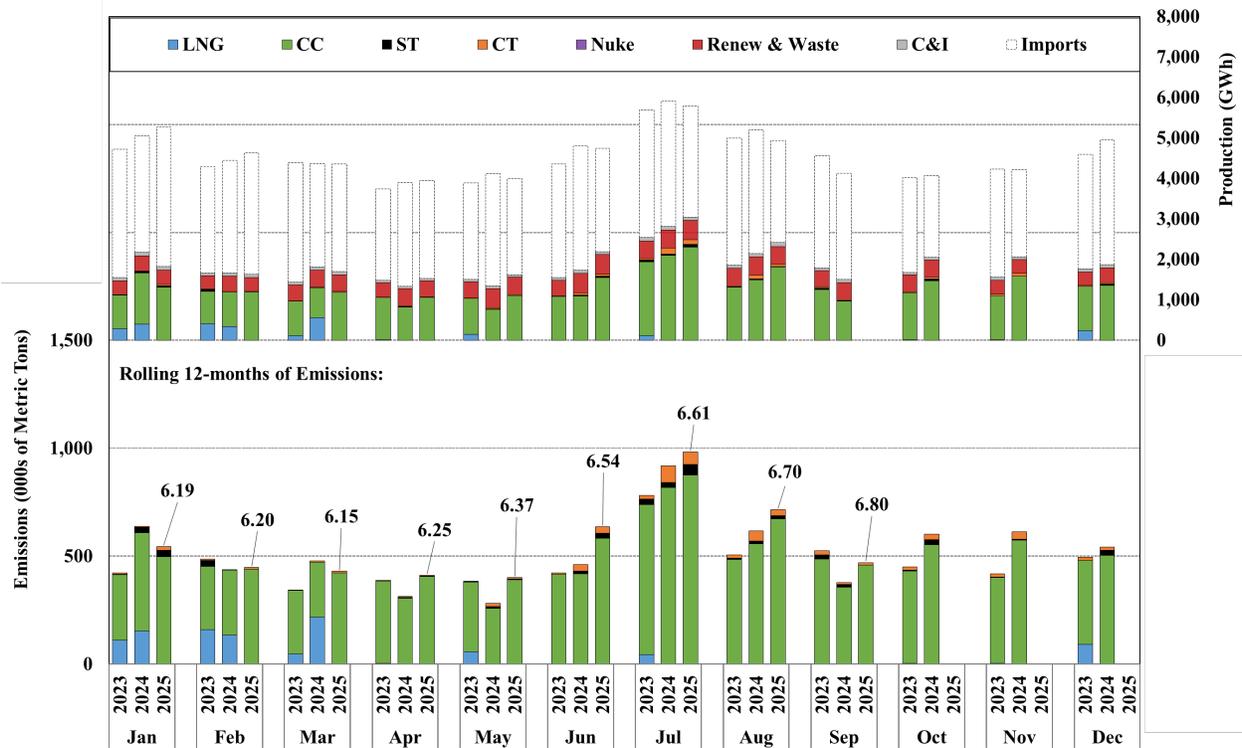
Table 1: Electricity Supply⁹ and Emissions¹⁰

Year	Generation By Type, January-August (TWh)							
	LNG	CC	ST	CT	Renew & Waste	C&I	Imports	Total
2023	1.1	8.6	0.10	0.11	3.1	0.58	22.5	36.1
2024	1.3	9.1	0.13	0.36	3.5	0.63	22.7	37.8
2025	-	11.5	0.18	0.30	3.3	0.62	21.7	37.6
	Carbon Dioxide Emissions, January-September (Million Metric Tons)							
2023	0.4	3.7	0.08	0.08	-	-	-	4.26
2024	0.5	3.7	0.10	0.19	-	-	-	4.52
2025	-	4.7	0.13	0.17	-	-	-	5.04

⁹ Generation is based on EIA Form 923 data, and Real-Time Load is from the ISO-NE website. Form 923 data for 2025 is not final, so values for 2025 may change in future reports. Form 923 data was unavailable for September 2025 when this report was produced, so generation is shown for January to August only.

¹⁰ The only LNG-fueled generating facility among the covered facilities was retired in June 2024.

Figure 2: Monthly Electricity Supply and Emissions, 2023-2025



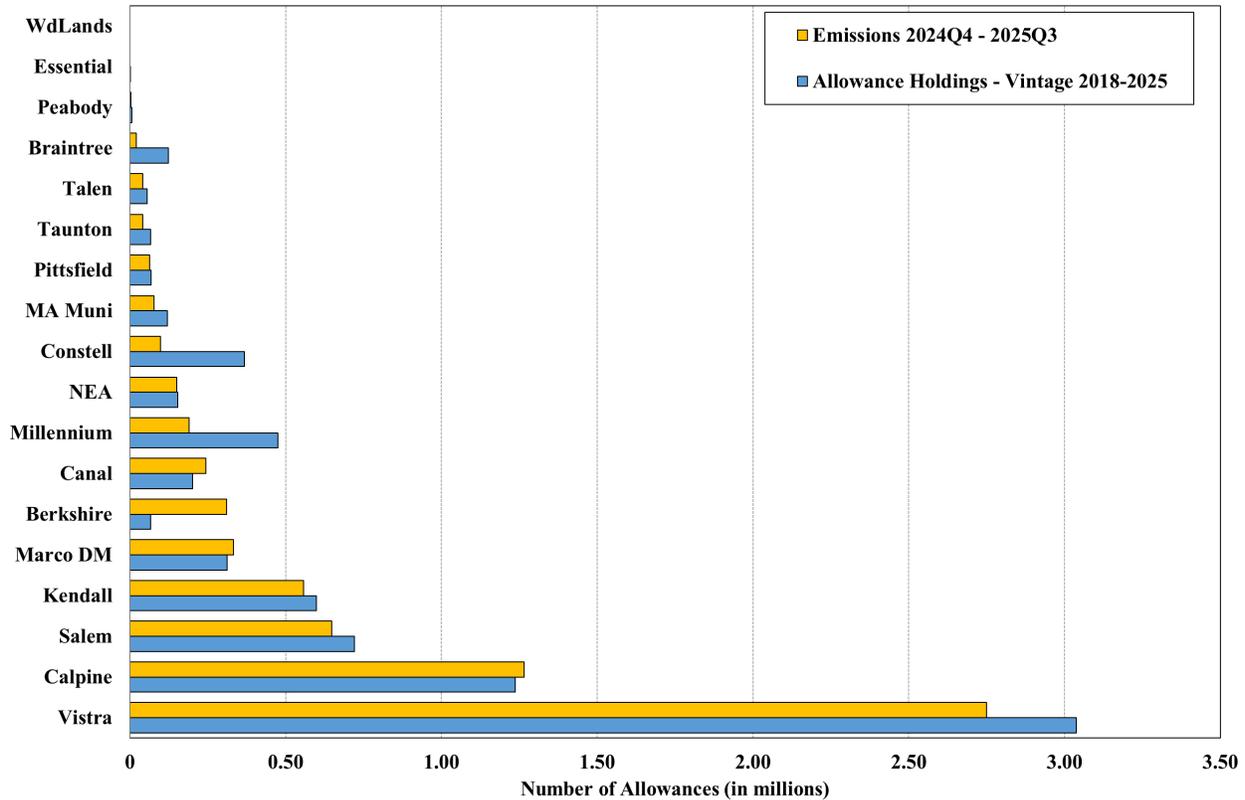
In the first nine months of the year, 2025 emissions increased from 2023 and 2024. This increase in emissions reflected that:

- Load levels increased 4 percent from 2023,
- Imports to Massachusetts decreased 5 percent from 2024,
- Emissions from combined cycle units increased by 1 million metric tons from 2023 and 2024.

Twelve-month rolling average emissions were 6.80 million metric tons in September 2025, which is up from annual emissions of 6.28 million metric tons in 2024.

Figure 3 shows, for each regulated entity, its 12-month total emissions from October 2024 to September 2025 compared to its estimated holdings of allowances that are usable for 2025 compliance. This is composed of the sum of allowances banked from previous years and vintage 2025 allowances acquired.

Figure 3: Allowance Holdings for 2025 and Emissions by Regulated Entity ¹¹



The figure shows that most regulated entities already hold sufficient allowances to meet their compliance obligations if 2025 emissions are similar to emissions over the 12-month period ending in September 2025. For a regulated entity whose emissions are running ahead of its allowance holdings in the last quarter of 2025, the regulated entity will be able to satisfy its compliance obligations through some combination of:

- Allowance purchases in the secondary market
- Moderating its emissions
- Emergency deferred compliance

Thus, all regulated entities should be able to satisfy their 2025 compliance obligations.

¹¹ Holdings and allocations are shown as of November 6, 2024. Emissions reporting available at the time of report creation covered the first three quarters of 2024.

E. DISCUSSION OF MARKET MONITORING

As the Massachusetts Carbon Allowance Program Market Monitor, we monitor trading and holdings amongst regulated entities in order to identify anticompetitive conduct. This section discusses two types of anti-competitive conduct for which we monitor in the secondary market. In the current period we find no evidence of anti-competitive conduct.

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 production inputs. Hence, we screen information on the holdings of CO₂ allowances and the demand for allowances to identify firms that might acquire a position that raises competitive concerns.

Another potential concern is that a firm expecting to purchase CO₂ allowances in the auction might sell a large number of allowances below the competitive level. Such a firm might profit from buying a larger number of CO₂ allowances in the auction at a discount if the bidding in the auction were influenced by the depressed transfer price. For this to be a profitable strategy, the firm would need to be able to substantially depress the current price with a relatively small amount of sales—an amount smaller than the amount of CO₂ allowances it planned to buy in the auction. Firms that are looking for an opportunity to sell excess allowances or to purchase CO₂ allowances for their future compliance needs help limit the effectiveness of a strategy to depress prices below the competitive level.