

CAP-AND-INVEST FOR MARYLAND

ISSUE BRIEF 5: AUCTION & ALLOCATION OF ALLOWANCES

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**Climate Law &
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Climate Law & Policy Project

Climate Law & Policy Project is a 501(c)(3) non-profit organization. CLPP's mission is to help formulate and advocate environmentally, socially, and scientifically sound policies to reduce emissions and protect communities around the world from the impacts of climate change.

CLPP operates like a think tank – seeking practical and politically viable strategies – while simultaneously advocating for strong responses to avert the increasingly urgent problem of climate change.

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Introduction

Maryland's Department of the Environment (MDE) has discussed the possibility of developing an economy-wide cap-and-invest program for the state. This paper explores the issues involved in the *auction and allocation of emission allowances*.

Maryland has some of the most ambitious greenhouse gas (GHG) reduction targets in the country. By law, it must reduce emissions 60% from 2006 levels by 2031 and achieve net-zero emissions by 2045.

In December 2023, MDE released [Maryland's Climate Pollution Reduction Plan](#) (CPRP) laying out a strategy to achieve the state's near-term climate goal and place the state on a path to achieve its 2045 goal. The CPRP includes an economy-wide cap-and-invest program, both to close a 3.5 million metric ton emissions gap remaining after MDE's other policy recommendations are implemented and to raise the roughly \$1 billion per year in new revenue the CPRP estimates is needed to fund several of these policy programs. (Alternative mechanisms, such as a carbon fee, are also included as potential revenue-raising options.) There is little detail in the CPRP about how a cap-and-invest system might be designed to best serve Maryland's needs.

In December 2024, the [annual report](#) from the Maryland Commission on Climate Change (MCCC) included a recommendation that the General Assembly should authorize a study to evaluate the design of a cap-and-invest program. The MCCC's 2025 [recommendations](#) include a similar directive aimed at the Moore Administration.

Not all stakeholders may be familiar with cap-and-invest and how it works. **Put simply, a cap-and-invest approach establishes a declining cap on emissions levels, requires polluters to acquire and retire emission**

allowances, and invests the proceeds of allowance sales (which can be substantial) in achieving a rapid, effective, and equitable transition to a decarbonized economy.

CLPP previously produced a [primer](#) that offered an overview of cap-and-invest, briefly described how it is being implemented in other jurisdictions, and identified some key design elements that must be considered.

This issue brief is part of a [series](#) taking deeper dives into those and other design elements. Each brief focuses on one design element (or set of elements), reviews how other jurisdictions address that element, and discusses the issues at play as Maryland considers its own cap-and-invest program.

This brief focuses on the **auction and allocation of allowances** — in other words, how allowances ultimately get into the hands of emitters who need them for compliance.

For reasons discussed in this paper, Maryland should follow the approach of other North American jurisdictions and hold quarterly, single-round, sealed-bid, uniform-price auctions, with measures to prevent market domination and manipulation. Maryland should provide free allocations of allowances to energy-intensive, trade-exposed industries to help them stay competitive and to avoid emissions leakage. Maryland probably should also allocate allowances to gas utilities and, if electricity is covered by the economy-wide cap, to electric utilities to help mitigate cost impacts on ratepayers.

What Has to Be Decided Regarding Auction & Allocation?

The fundamental instrument of cap-and-invest is the allowance. For each ton of covered emissions, emitters must obtain and retire one allowance. Maryland will have to determine which entities have to buy allowances and which ones, if any, are allocated allowances for free — as well as the rules around both auctions and allocations.

Inherent in creating a cap-and-invest system for Maryland is the need to raise revenue to invest in climate mitigation and resiliency. This means some or all allowances must be sold, typically through an auction. Maryland will need to make decisions about auction frequency, ways to prevent market manipulation, and other rules. Since Maryland is already part of a cap-and-invest system for the electricity sector — the Regional Greenhouse Gas Initiative (RGGI) — decisions will also have to be made about whether and how to coordinate the Maryland auctions with RGGI auctions. This will be of particular importance if Maryland decides to include the electricity sector under the economy-wide cap-and-invest program in

addition to having the sector covered by RGGI, as discussed in CLPP [issue brief #4](#) on program coverage.

Decisions will also need to be made about whether any allowances are freely allocated to particular entities. Some jurisdictions, for instance, have allocated allowances to electricity and gas utilities for them to auction, with the proceeds to be used for ratepayer benefit. Some have also allocated allowances to energy-intensive trade-exposed (EITE) industries to reduce their costs, keep them competitive, and avoid having emissions simply “leak” to other states should industries choose to relocate to avoid compliance.

How Do Allowance Auctions Work?

Cap-and-invest allowance auctions in other North American jurisdictions have been single-round, uniform price auctions. When an allowance auction is announced, eligible entities apply to participate and submit bid guarantees (i.e., financial assurance that they can cover their bids). During the auction, they can submit one bid or multiple bids, with each bid describing how many allowances they want at a particular price. Bids must be at or above the reserve price (price floor). The auction administrator then ranks all qualified bids from the highest bid price to the lowest and awards allowances starting with the highest bidder, moving to lower bidders until all allowances have been awarded or all bids have been filled. The bid price at which the last available allowances are sold or all bids are filled becomes the settlement price (also called the clearing price) — the price per allowance that all entities are charged for the allowances won in the auction. In some jurisdictions, if the settlement price is higher than a certain threshold, additional allowances are made available from a cost (or allowance price) containment reserve; if the settlement price is lower than a certain threshold, some allowances may be removed from the auction into an emissions containment reserve. (Cost containment reserves and emissions containment reserves are discussed in detail in CLPP [issue brief #2](#) on program reviews, automatic adjustments, and price certainty mechanisms.)

What Do Other Jurisdictions Do?

Cap-and-invest programs already exist or are under development in some other North American jurisdictions. Maryland can learn from others' experiences and approaches.

California's cap-and-invest [program](#) distributes allowances through both [free allocation](#) to regulated entities and sale at [auction](#) to all market participants.

California allocates free allowances to a range of entities, including:

- [Electrical distribution utilities \(EDUs\) and natural gas suppliers](#) (17 CCR §§ [95892](#), [95893](#)). EDUs must consign all allocated allowances to auction, and natural gas suppliers must consign a rising percentage of allocated allowances (reaching 100% in 2030). The auction proceeds must be used to benefit their ratepayers. For EDUs, the auction revenues had been available for renewable energy, energy efficiency programs, transportation and building electrification, other greenhouse gas reducing efforts, and distributions to ratepayers (as climate credits or rebates). For natural gas suppliers, the revenues were to be used for energy efficiency, other emission reduction efforts, and ratepayer distributions. However, [AB1207](#), which California enacted in September 2025, directed that free allowance allocations transition from gas utilities to EDUs by the beginning of 2031 and that auction revenues received by EDUs be credited directly to residential customers on their bills, "in no more than four high-billed months of each year to maximize customer electric bill affordability".
- [Industrial facilities](#) (§ [95891](#)), to assist in smoothing the transition and to minimize

emissions leakage (where emissions go down in California but rise elsewhere due to production relocating outside of the state). Industrial facilities do not get allocated all the allowances they need to comply with the program, so they still must reduce on-site emissions and/or buy additional allowances.

- [Other entities](#) for purposes of either protecting ratepayers or providing transition assistance, including legacy contract generators (§ [95894](#)), universities and public service facilities (§§ [95890\(d\)](#), [95891\(d\)](#), [95871\(e\)](#)), public water agencies (§ [95895](#)), and waste-to-energy facilities (for 2021-2024 allowance budgets only) (§§ [95871\(i\)](#), [95891\(f\)](#)).

Unallocated allowances are sold at [auction](#) (§ [95871\(h\)](#)). The auctions are held quarterly ([Art. 5 Appendix C](#)). There is a single round of bidding (§ [95911](#)). As described in CLPP's [issue brief #2](#) on automatic adjustment mechanisms and price containment, California's auctions have an auction reserve price (price floor), a price ceiling, and an allowance price containment reserve. To prevent market domination and manipulation, California has auction purchase limits (§ [95911](#)), limits on the amount of allowances an entity may hold (§ [95920](#)), and rules forbidding participants from disclosing information regarding their auction participation (§ [95914](#)). The Western Climate Initiative (WCI), which runs the auctions, [retains](#) an independent market monitor to monitor auctions and secondary markets to identify any anti-competitive behavior.

Quebec's cap-and-invest [system](#) is linked with California's, and the two jurisdictions hold joint auctions, so there is some similarity with California's system. Like California, Quebec distributes allowances through both [direct allocation](#) and sale at [auction](#).

Under Quebec regulations (Q-2, r. 46.1 § [39](#) and [Appendix C](#)), emitters in the following sectors are eligible to receive free allocations of allowances:

- Mining and quarrying (except oil and gas);
- Legacy contract electricity generators;
- Industrial steam and air-conditioning supply;
- Manufacturing; and
- Power acquired for use by the enterprise or for sale in Quebec that is generated in a state with a cap-and-trade system covering power generation.

As explained on the program's [website](#), these free allocations are focused on EITE emitters to help maintain competitiveness and avoid carbon leakage. Companies such as electricity producers and fuel distributors that do not face national or international competition or that can pass the costs on to their customers do not present the same risk of carbon leakage and so, unlike in California, do not receive free allocations.

The rate of free allocations per unit produced declines annually to gradually increase the importance of carbon in business decisions. Starting in 2024, a portion of the allocated allowances must be consigned to auction (§ [40](#)), with the revenues to be used by businesses to study emission reduction potential, invest in emission reduction projects in their facilities, or invest in research and

development aimed at reducing emissions (Part III of [Appendix C](#)).

Unallocated allowances are sold at quarterly (§ [45](#)), single round (§ [49](#)) auctions jointly held with California. As described in CLPP's [issue brief #2](#) on automatic adjustment and price containment mechanisms, Quebec's auctions have an auction reserve price (price floor) and an allowance price containment reserve (known as the Minister's reserve). To prevent market domination and manipulation, Quebec has auction purchase limits (§ [50](#)), holding limits (§ [32](#)), and rules forbidding participants from disclosing information regarding their auction participation (§ [51](#)). As noted, WCI, which runs the joint auctions, [retains](#) an independent market monitor to monitor auctions and secondary markets to identify any anti-competitive behavior.

Washington's cap-and-invest [program](#), like California's and Quebec's, distributes allowances through both [allocation](#) and [auction](#).

As laid out in Washington law, electric utilities (RCW [70A.65.120](#)), natural gas utilities (RCW [70A.65.130](#)), and EITE industries (RCW [70A.65.110](#)) receive some or all of their allowances for free.

- Electric utilities receive allowances to mitigate costs on consumers. These allowances can either be consigned to auction for the benefit of ratepayers (prioritizing mitigation of financial impacts on low-income customers), used for compliance, banked for future use, or transferred to eligible electrical generation facilities or a federal power marketing administration. The amount of allowances depends on forecasts of each utility's supply and demand and the resulting cost burdens on consumers.

- Natural gas utilities receive allowances to mitigate costs on consumers. Starting in 2023, 65% of the allowances were to be consigned to auction, with the percentage increasing by 5% each year until it reaches 100%. Any allowances not consigned can be used for compliance. Revenues from sales of consigned allowances are to be used for the benefit of ratepayers, including credits on customer bills (prioritizing low-income customers) and actions such as weatherization, efficiency, and decarbonization. The amount of allocated allowances declines proportionately with the statewide cap, starting in 2023 at 93% of a utility's emissions baseline and decreasing 7% annually through 2030.
- EITEs [receive allowances](#) to avoid impacts on competitiveness, industry relocation, and emissions leakage. EITEs receive free allowances equal to 100% of their baseline emissions through 2026, 97% through 2030, and 94% through at least 2034. EITEs can use the allowances for compliance, bank them for future use, or sell them to others.

All other allowances are auctioned. As in California and Quebec, auctions are held quarterly (RCW [70A.65.100](#)), with a single round of bidding (WAC [173-446-300](#)), and are run by WCI. As described in CLPP's [issue brief #2](#) on automatic adjustment and price containment mechanisms, Washington's auctions have an auction floor and ceiling price, an allowance price containment reserve, and an emissions containment reserve (which currently has no trigger price and so remains largely unimplemented). To prevent market domination and manipulation, Washington has auction purchase limits, holding limits, and rules

forbidding participants from disclosing information regarding their auction participation. Again, WCI, which runs the auctions, has [retained](#) an independent market monitor to monitor auctions and secondary markets to identify any anti-competitive behavior.

New York is in the process of developing an economy-wide cap-and-invest [program](#). Based on New York's December 2023 [pre-proposal outline](#), the state's cap-and-invest program, like the others described above, will distribute allowances through both allocation and auction.

New York proposes to give a limited number of no-cost allowances to EITEs to reduce the risk of emissions leakage and negative effects on competitiveness. The number of allowances given to an EITE would decline gradually in line with the statewide cap (while adjusting for any production changes). Allowances allocated to EITEs would have to be consigned to auction, not used for compliance. While EITEs would receive the revenues from the auction of consigned allowances, they would still have to bid at auction to purchase the volume of allowances they need for compliance.

New York is inviting comments regarding whether to also allocate allowances to electric utilities, with those allowances consigned to auction and the resulting revenues used to enhance affordability for ratepayers.

New York proposes to distribute all remaining allowances via auction. Like other programs, auctions would be single-round and held quarterly (though they could be held more frequently). As described in CLPP's [issue brief #2](#) on automatic adjustment and price containment mechanisms, New York proposes to have auctions with a price floor and ceiling price, a cost containment reserve, and an emissions containment reserve. To prevent

market domination and manipulation, New York proposes the same basic restrictions as other programs, such as auction purchase limits, holding limits, and prohibitions on collusion and market manipulation of any kind, including disclosure of information regarding auction participation. Also like other programs, New York would retain a professional independent market monitor to provide oversight and identify any market manipulation, collusion, or other prohibited practices.

The Regional Greenhouse Gas Initiative (RGGI) — a cooperative regional cap-and-invest [program](#) among several Northeastern and Mid-Atlantic states (including Maryland) that covers just the electric power sector — allows each individual member state to decide how to [distribute allowances](#). Each state issues allowances, most of which are distributed via the joint RGGI auctions, but some are allocated to [set-aside accounts](#) for distribution according to state-specific regulations.

In Maryland, for instance, MDE maintains several [set-aside accounts](#) for RGGI allowances. One is a Limited Industrial Exemption Set-Aside Account, which makes allowances available for retirement to regulated sources that, as a condition of their permits, limit annual electrical output to the PJM grid to less than 10% of total generation. Another is the Voluntary Renewable Set-Aside Account, which holds allowances available for retirement in exchange for the retirement of equivalent

Renewable Energy Certificates. Another, the Clean Generation Set-Aside Account, is for new in-state generation sources that apply Best Available Control Technology or Lowest Achievable Emissions Rates. A fourth, the Long Term Contract Set-Aside Account, holds allowances that can be sold at the floor price (not given) to sources in long-term power purchase contracts whose terms make purchasing allowances at auction (or in the secondary market) financially infeasible.

The vast majority of RGGI allowances, however, are distributed through [auctions](#). Like the other programs described here, RGGI holds quarterly [auctions](#), with a single-round, sealed-bid, uniform-price format. As described in CLPP's [issue brief #2](#) on automatic adjustment and price containment mechanisms, RGGI auctions have a minimum reserve price, a cost containment reserve, and (in most but not all RGGI states, and [only through 2026](#)) an emissions containment reserve. To prevent market domination and manipulation, [RGGI has](#) auction purchase limits and rules forbidding participants from disclosing information regarding their auction participation. RGGI has retained an independent market monitor to provide oversight and identify any market manipulation, collusion, or other noncompetitive practices.

Discussion

The experiences and approaches of other North American jurisdictions can be instructive in considering how emissions allowances in a Maryland cap-and-invest program should be distributed.

The cap-and-invest programs in place and under development in other jurisdictions have some clear commonalities in how they distribute allowances. Notably, all distribute allowances through both auctions and free allocations.

With respect to auctions, all North American jurisdictions hold quarterly auctions employing a single-round, sealed-bid, uniform-price format. They all have similar provisions to prevent market domination and manipulation, including auction purchase and (with the exception of RGGI) holding limits, prohibitions on disclosing auction participation information, and the retention of independent market monitors. They all have an auction reserve price (price floor) and a cost / allowance price containment reserve, though there is more variation with respect to price ceilings and emissions containment reserves. For the most part, there is a striking amount of uniformity in how different jurisdictions operate auctions to distribute allowances.

There are some similarities in how jurisdictions handle allocations of allowances as well, although RGGI is a bit of an outlier, given the single-sector (electricity only) nature of that market. California, Quebec, Washington, and (prospectively) New York all allocate free allowances to EITE industries to maintain competitiveness and avoid carbon leakage — generally providing allowances at volumes slightly lower than the industries' emissions levels. (At larger geographic scales, there may be other ways to protect EITEs without giving away allowances for free; for instance, at the national level, economists are looking at ways to protect EITEs by imposing carbon border tariffs on imports from countries that do not have comparable programs.) Jurisdictions vary somewhat in what the EITE industries can do with allocated allowances; some allow them to be used for compliance, while others require the

allowances (or a portion of them) to be consigned to auction.

Jurisdictions take different approaches with respect to allocating allowances to utilities. California and Washington allocate allowances to both electric and gas utilities, although California recently enacted a law transitioning allocated allowances away from gas companies and to electric utilities by 2031, in order to minimize ratepayer impacts, support the state's electrification initiatives, and meet the state's emissions reduction goals. California consigns all (for electric) or a rising amount through 2030 (for gas) of the allocated allowances, while Washington allows allowances to be used for compliance or consigned (for electric) or to be consigned in increasing amounts (for gas). Both states allocate allowances to utilities to benefit ratepayers. New York is exploring whether to follow the approach of allocating allowances to electric utilities for consignment to auction to benefit ratepayers. Quebec, however, appears to focus its allocated allowances on addressing the issue of carbon leakage, not ratepayer costs, and so does not allocate allowances to electricity and fuel suppliers that do not face international or national competition and that can pass the costs along to consumers.

It is important to note that whether entities receive allowances for free or via auction, they have an incentive under a cap-and-invest system to reduce their emissions. Even if an entity receives free allowances, it has an incentive to reduce its own emissions if doing so costs less than it can make by selling the allowances. Because even freely allocated allowances have economic value (the price they could be sold for), the extent to which allowance prices are passed on to consumers is likewise unaffected by whether entities receive the allowances for free or via auction.

What Should Maryland Do?

MDE has discussed the possibility of developing an economy-wide cap-and-invest program to close an emissions gap and raise the substantial revenues needed to support the sectoral programs in its *Climate Pollution Reduction Plan*. Key elements to consider include which allowances should be auctioned, which should be allocated, and what the rules and requirements should be with respect to those auctions and allocations.

Cap-and-invest systems in other jurisdictions and in RGGI provide ample experience for Maryland to draw on, and where there is a common approach regarding auctions and allocations, Maryland should follow their examples. This is not only because it is prudent to follow well-established practices that are working well, but also because it will simplify potential future linkage with other states' cap-and-invest systems, should Maryland decide to pursue such linkage in the future.

With respect to auctions, like all current cap-and-invest jurisdictions in North America, Maryland should hold quarterly, single-round, sealed-bid, uniform-price auctions, with all the typical restrictions and provisions to prevent market domination and manipulation. Maryland may want to coordinate the timing of auctions to align with RGGI auctions, particularly if Maryland decides to include electricity generation under the economy-wide cap in addition to RGGI (as reviewed in CLPP's [issue brief #4](#) on program coverage).

As described in CLPP's [issue brief #2](#) on automatic adjustment and price containment mechanisms, Maryland's auctions should feature a price floor, a cost containment reserve, and an emissions containment reserve (all potentially part of an allowance supply budget that is continuous rather than tiered). A decision about whether to adopt a price ceiling

could be postponed to see if such a mechanism is ultimately needed or not.

As for free allocations, Maryland should probably emulate other jurisdictions in providing substantial but not complete allocations to EITE industries to help them maintain competitiveness and to avoid carbon leakage. Whether to freely allocate allowances to electric utilities (and whether some or all of those allowances should be consigned for auction) will largely depend, again, on whether electricity will be included under the economy-wide cap in addition to RGGI or remain solely covered by RGGI. If electricity remains solely covered by RGGI, there is no need for utilities to receive free allocations to protect ratepayers under an economy-wide cap-and-invest program. If, however, electricity is incorporated into the economy-wide program, Maryland probably should follow the example of all jurisdictions but Quebec and provide free allocations to electric utilities, with those allowances consigned to auction for the benefit of ratepayers and to accelerate decarbonization. Maryland should consider doing the same for gas utilities, though it should track the effects of — and, if electricity is incorporated into the economy-wide program, decide whether to emulate — California's recent decision to transition free allowances from gas to electric utilities in order to support electrification and reduce electricity costs.