Explaining the RGGI price path
2008–2026

A bankable cap prices expected scarcity, and the market has repriced emissions accordingly

William Shobe
Weldon Cooper Center, UVA

$1.86
low, 2010–13

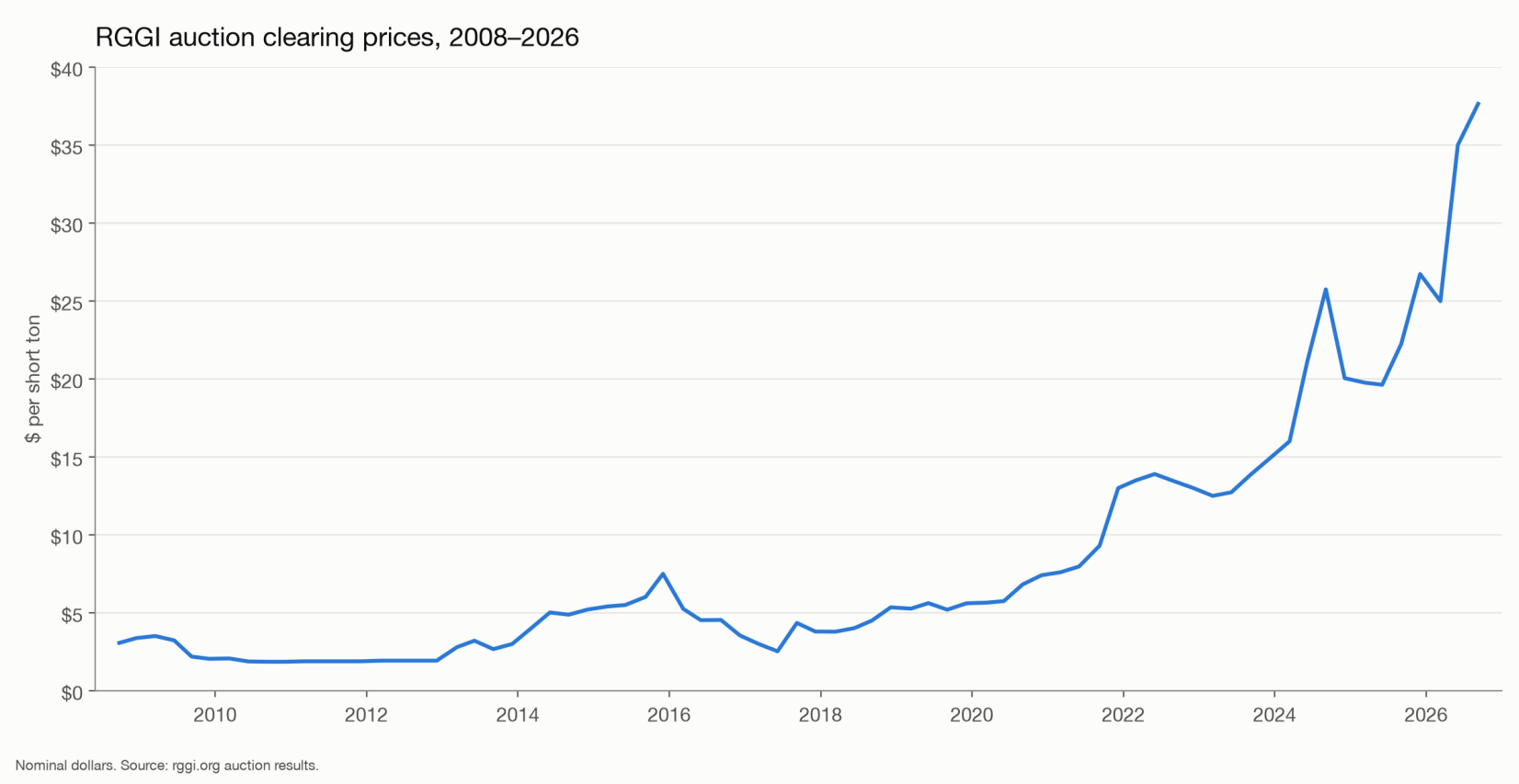
$2.53
low, Jun 2017

$37.65
Sept 2026

Data through Auction 73 (Sept. 9, 2026)

THE PRICE PATH

RGGI allowance prices over time (nominal)



Nominal dollars. Source: rggi.org auction results.

THE ASSET PRICING MODEL

A bankable cap prices expected cumulative scarcity

With a positive bank, today's price should reflect expected price when the bank is exhausted.

Four implications

- Jumps occur on news about the cap, membership, cost containment, or emissions (exogenous shocks).
- Between unanticipated news, the price should move up at about the cost of carrying an allowance.
- As the bank shrinks, the binding date nears: the price tracks near-term abatement cost and volatility rises.
- Today's allowance price should price expected bank depletion.

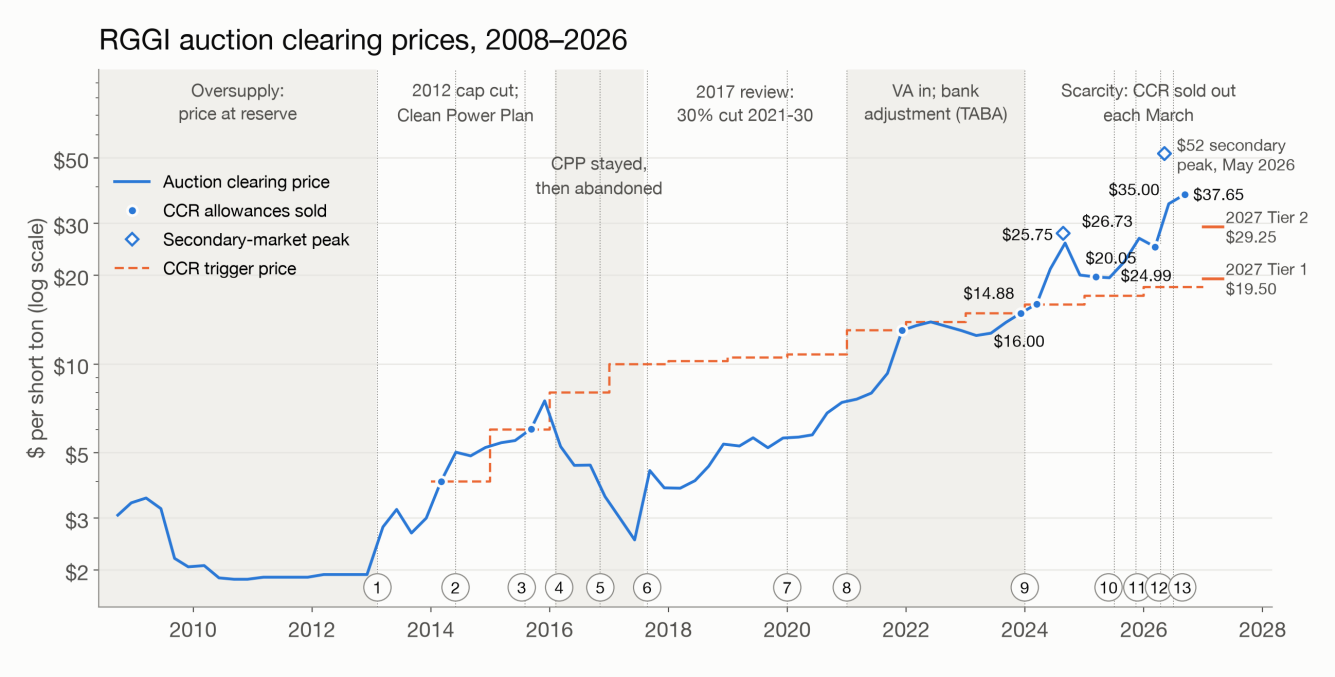
Observed growth rate, by time window

Dec 2012 → Dec 2015 $1.93 → $7.50	57%
Jun 2017 → Dec 2020 $2.53 → $7.41	36%
Mar 2021 → Dec 2023 $7.60 → $14.88	28%
Dec 2023 → Sept 2026 $14.88 → $37.65	40%

Carrying cost is perhaps 5–10% a year. These rates reflect shocks, not carrying costs.

THE PATH

Six phases, each tied to a rule or market change



Auction clearing prices, log scale. Source: rggi.org auction results.

−30%

Mar 2016: first auction after the Supreme Court stayed the CPP

+72%

Sept 2017: first auction after the 2017 Program Review

+40%/yr

Dec 2023 → Sept 2026, far above any carrying cost

2008–2017

Each early move has a documented cause

2008–12 — **Oversupply**
Cap of 188M far above emissions. Auctions 9–18 undersold; price at the reserve ($1.86–$1.93).

Feb 2013 — **2012 Program Review**
Base cap cut to 91M for 2014, plus two bank adjustments. Next auction $1.93 → $2.80.

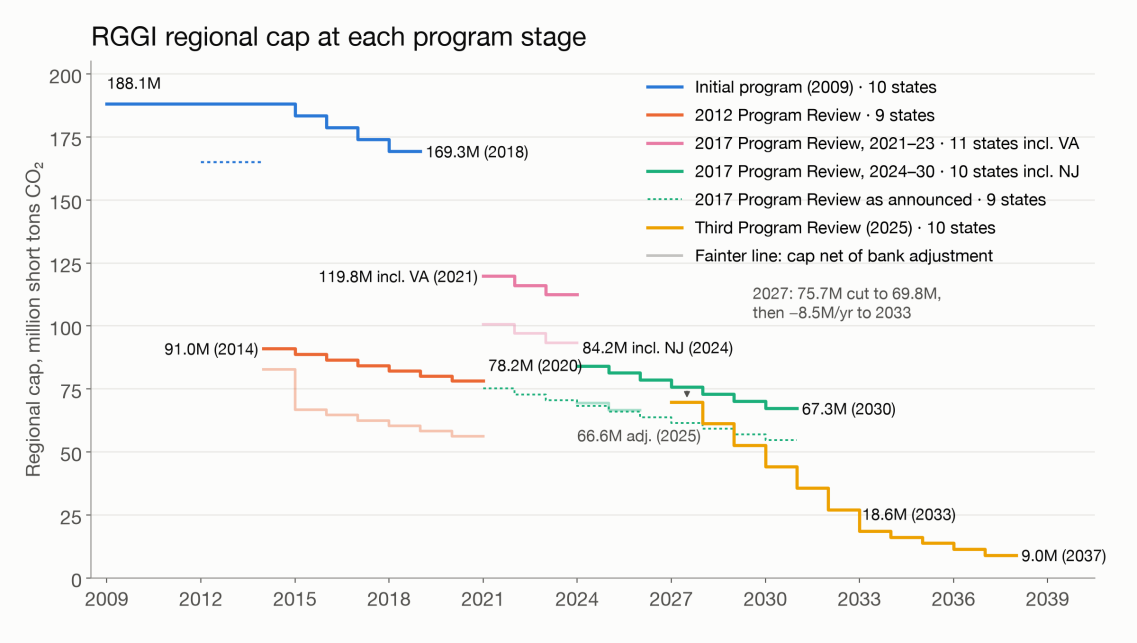
2014–15 — **Clean Power Plan**
RGGI usable for federal compliance. Auction two days after the proposal: $4.00 → $5.02 (+26%); peak $7.50.

2016–17 — **CPP stayed, then abandoned**
After the stay: −30%. After the election: −22%. Low of $2.53 in June 2017.

Aug 2017 — **Second Program Review**
30% cap cut for 2021–30 and ”bank adjustment”. +72% at the next auction.

WHY 2024–26 IS DIFFERENT

Supply tightening from earlier reviews arrived



Regional cap at each program stage; fainter lines are caps net of bank adjustments.

14.7M a year

Bank adjustment removed in 2024 and 2025 — the largest factor cutting the surplus

81.3M → 66.6M

2025 ten-state cap before and after adjustment, against 85M of emissions

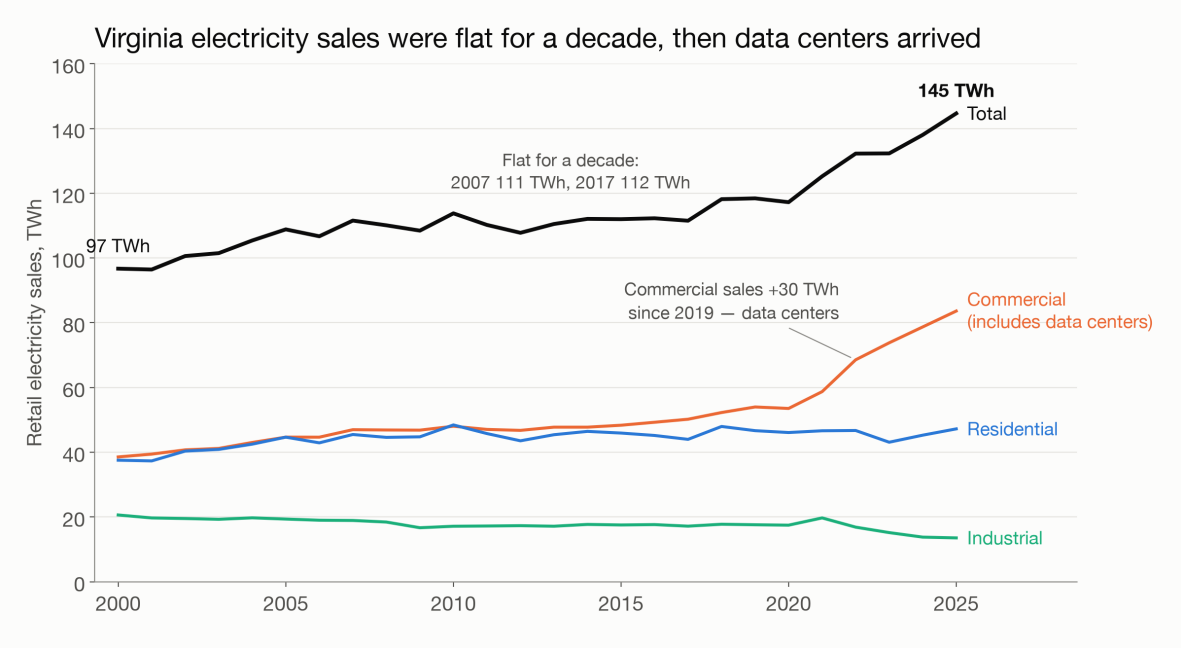
71M → 45M

Surplus in circulation, early 2024 to the projected March 2027 deadline

The CCR sold out in the first auction of every year since 2024, so the CCR no longer caps the price.

VIRGINIA ELECTRICITY SALES, 2000–2025

Load growth started showing around 2018

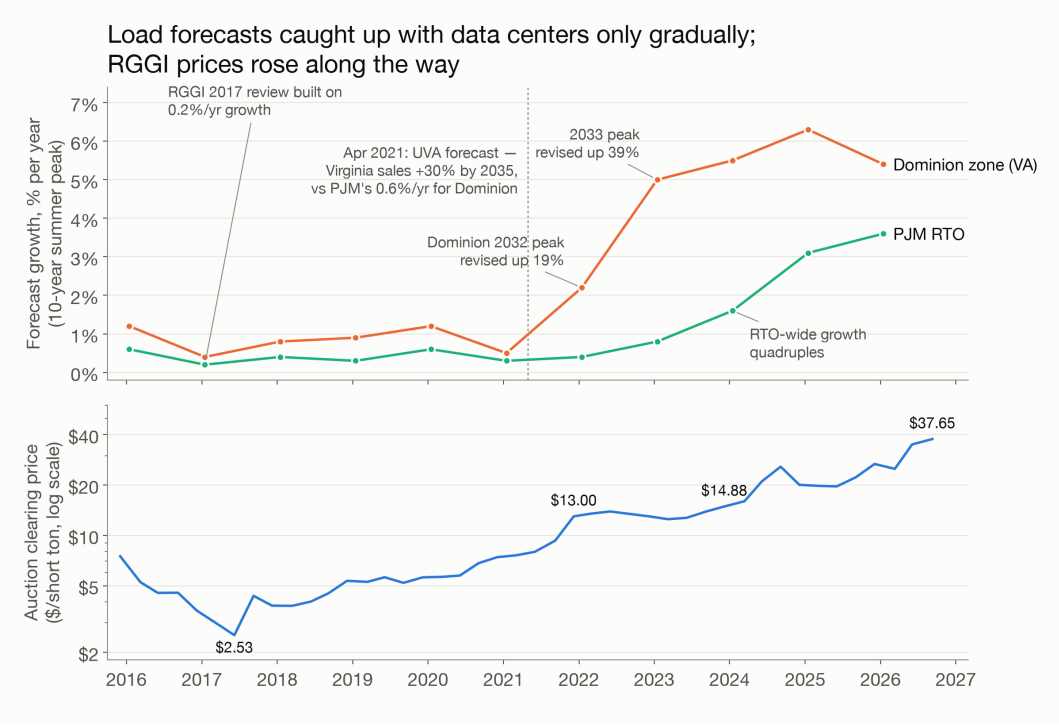


Retail sales to ultimate customers. Sources: EIA-861 (2000–09); EIA-861M, summed to years (2010–25).

- Starting around 2018, commercial sales began to accelerate enough to break out of background noise.
- Commercial sales rose 29.6 TWh from 2019 to 2025 — more than the state's entire net growth over those years.
- Industrial sales fell from 20.6 to 13.5 TWh; residential is flat.
- Forecasts can take time to catch up.

2018–2023

Forecasts caught up with data centers — slowly



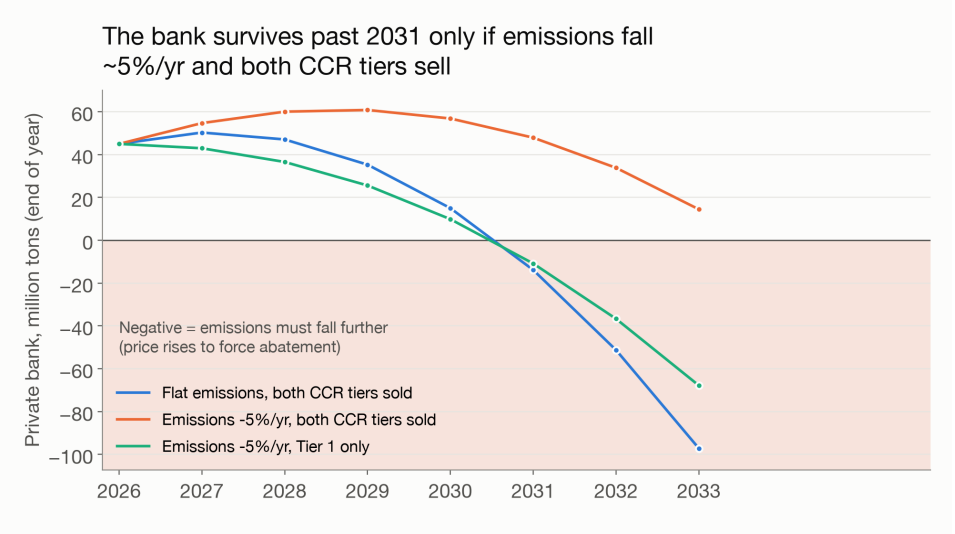
PJM load forecast vintages against the auction price path.

- The 2017 cap was set during slow demand growth: RGGI generation was modeled to fall about 5% from 2017 to 2031.
- Dominion's 10-year forecast went 0.4% → 2.2% → 5.0% a year; the 2033 peak was revised up 39% in one year.
- April 2021: an independent UVA forecast put Virginia sales up 30% by 2035 (~1.8%/yr) against PJM's 0.6%/yr for Dominion.
- PJM-wide growth followed only in 2024–26 (0.8% → 3.6%).
- Higher expected load raises expected cumulative emissions under a fixed cap, so every banked allowance is worth more.

THIRD PROGRAM REVIEW

July 2025: Virginia rejoin and program review

- 2027 cap of 69.8M, against 75.7M under the old rule.
- The cap falls 8.5M a year to about 18.6M in 2033, then to roughly 9M by 2037.
- The ECR is replaced by a $9.00 reserve price.
- Relief added: a Tier 2 CCR at $29.25 in 2027, and no new bank adjustment.
- Prices then rose steadily: $19.63 (Jun) → $22.25 (Sep) → $26.73 (Dec 2025). Volatility fell, as the review completion removed uncertainty.



In Q2 2026 futures traded above the $29.25 Tier 2 trigger: the market expects both tiers to be exhausted in 2027.

MEMBERSHIP

Virginia is likely a net buyer

Virginia rejoining RGGI

- Rejoined July 1, 2026; a half-year 2026 budget of 11.48M plus a 1.148M CCR.
- Virginia will be a net buyer at prevailing prices: covered sources emitted 17M in the second half of 2025.
- Secondary prices jumped : $28.88 (Apr 13) → $52.88 (May 4) and then receded. [Low liquidity makes these more volatile than auction prices).]
- September was the first auction with Virginia supply: $37.65, and Virginia's CCR sold out.
- Higher allowance prices will increase imports from PJM, working against rapid price increases.
- Conclusion: The ”Virginia effect” and data center demand are now incorporated into allowance prices

MARKET COMPETITIVENESS

Scarcity, not speculation

65 bidders
Auction 73; bids were 2.6× supply, seems quite competitive

60M → 37M
investor-held surplus, Q2 2025 to Q2 2026 — investors were net sellers

71%
Allowances in circulation now held by compliance-oriented entities

- A speculative bubble would show investors accumulating. The data show the opposite: allowances are moving from investors to compliance entities.
- 2027-vintage futures traded below 2026 vintages, probably due to short-term compliance true-up demand. (Allowances available before the March 1, 2027 carry a premium.)
- The derivatives market is deep — Q2 2026 volume of 212M, with open interest rising from 104M to 150M — and the market monitor found no material evidence of collusion or manipulation.

OUTLOOK

Other considerations

- The March 2027 auction releases up to 23.5M CCR allowances plus Virginia's share (not yet determined). Q1 2026 is the analog: $26.73 → $24.99.
- Higher prices encourage emission reductions that take time to materialize.
- The Fourth Program Review begins by 2028. There is considerable uncertainty over the likely choice of the future path of the cap.

The bottom line

Current prices reflect both increased emission reduction ambition and increased demand growth.

Sources: rggi.org auction results and program review materials; Potomac Economics market monitor reports; PJM Load Forecast Reports 2016–2026; EIA; EPA CAMPD.

Questions

William Shobe
Weldon Cooper Center, UVA
shobe@virginia.edu