

Technical Support Document for Update RGGI Affordability Analysis October 2026

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Background

The [NYS RGGI Cost Impacts](#) spreadsheet calculates the costs of RGGI to New Yorkers to evaluate the DEC and NYSERDA's [press release](#) that claimed RGGI investments have generated "nearly \$12 billion in net ratepayer savings" against roughly \$2 billion invested — a "nearly 6-to-1" return that supposedly proves affordability is being served. The “nearly 6-1” cost benefit ratio claim accounts for costs by simply multiplying the auction price by the allowances used. The spreadsheet also updates an earlier analysis of the way that RGGI costs are incorporated into the marginal-price wholesale electricity market that represents the actual way allowance costs are paid by consumers.

RGGI cost recovery makes the allowance price become a variable operating cost. In New York's marginal-price wholesale electricity market, when a generator with RGGI compliance obligations sets or influences the clearing price for an interval, its allowance cost gets bid in. That recovers the costs of the RGGI auction allowance purchases. However, this approach raises the price paid to every accepted resource in that interval. It does not merely reimburse the emitting unit for the allowances it bought. Non-emitting and even imported resources can collect the higher price despite bearing little or none of the underlying RGGI cost themselves. All those costs are passed on to consumers.

There is another aspect of the cost-benefit claim. The invested funds only come from the auction proceeds. The cost estimate does not account for the cost of allowances purchased on the secondary market from other entities with RGGI compliance obligations or investors who try to buy low and sell

high. In either case ratepayers pay the going price of the allowances used to cover the compliance obligations. For example, the [allowance clearing price jumped](#) 40% from \$24.99 in March to \$35.00 in June. If a compliance entity bought allowances from an investor who purchased then at the March auction, consumers pay the \$35 plus the profit extracted by the investor, but the benefits only come from the original \$25 auction price.

New York State RGGI Cost Impacts Spreadsheet

Calculation Methodology

Accurately accounting for RGGI costs requires hourly information for every generating unit in the state. That is proprietary NYISO information so I cannot precisely calculate the costs. This spreadsheet relies on annual emissions and operating data and a set of documented assumptions to estimate the costs of the actual cost recovery process. This October 2026 revision replaces the assumed unit-type weights used in the September version with weights derived from the observed operating hours of each representative unit type, checks the approach against the marginal-unit data and RGGI cost formula in the Potomac Economics [Quarterly Report on the New York ISO Electricity Markets Second Quarter of 2026](#), adds complete 2025 data, and adds the September 2026 Auction 73 results.

The basic calculation approach uses annual data from the EPA Clean Air Markets Program Division for every New York generating unit with RGGI compliance obligations together with the following inputs and calculated parameters:

- Annual average RGGI allowance price (\$/ton) equals New York auction proceeds divided by New York allowances sold in each calendar year, from [RGGI, Inc.](#) and the [New York proceeds by auction](#) file. The 2026 projection uses \$35 per ton, the Auction 72 clearing price.
- Total annual electricity used in New York State (GWh) from the [NYISO Gold Book](#) Table III-2a Energy.
- Annual CO2 emissions (tons), gross load (MWh), heat input (mmBtu), and operating time (hours) for every RGGI-affected unit from [EPA CAMPD data](#).
- Heat rate (mmBtu/MWh) equals heat input divided by gross load, and CO2 rate (tons/MWh) equals CO2 emissions divided by gross load. Both are calculated for the entire RGGI-affected fleet and for each of five representative unit types.
- The RGGI allowance cost (¢/kWh) equals the CO2 rate (tons/MWh) times the allowance price (\$/ton) divided by 10.
- The statewide RGGI cost (\$ million) equals the RGGI allowance cost (¢/kWh) times the energy to which it applies (GWh) divided by 100.
- A typical New York [residential electric customer used](#) approximately 570 kWh per month (6,840 kWh annually) in 2024, and the average residential bill was \$139.53 per month (\$1,674 per year). Multiplying the annual energy use by a RGGI allowance cost in ¢/kWh produces a typical residential bill impact.

The spreadsheet reports three measures. The direct allowance cost is what RGGI-affected generators pay for the allowances that cover their emissions. The two market-impact measures estimate what consumers pay when the allowance cost is bid into the wholesale clearing price and paid to every

accepted resource. The direct cost is recovered through the clearing price, so it is already included in the market-impact measures. The measures are alternatives and should not be added together.

Table 1: NY RGGI Cost Impacts Spreadsheet Tabs

Tab	Description
Documentation	Data sources, calculation notes, and revision history
Total Annual Costs	Statewide RGGI cost (\$ million) for 2021–2025 and a 2026 projection by measure and representative unit type; rows 51–56 summarize the values used in the article
Customer Costs	Residential bill impact (\$ per customer per year) for the same measures; rows 51–61 summarize the article values and the share of a typical residential bill
Annual	Annual New York auction proceeds, allowances sold, and average allowance price
Potomac	Annual operating data by representative unit type, merit-order clearing hours, clearing shares, and apportioned Gold Book energy
Totals	Annual emissions and operating totals by EPA unit type, primary fuel, and representative unit type
Input	Downloaded annual emissions and operating data from EPA CAMPD
Unit Types	Assignment of each unit to a representative unit type
Allowance \$	Quarterly New York RGGI auction results (allowances sold and proceeds) through Auction 73
Annual \$	2009–2026 annual roll-up of EIA residential customer counts, RGGI auction data, and statewide CAMPD totals
Transpose	Working tab used to transpose the Allowance \$ and CAMPD data for the Annual \$ tab

Clearing Unit Estimates

In a deregulated electric market such as that run by the New York Independent System Operator, power plants, load-serving entities, and other participants submit competing bids and offers to an auction that determines the least-cost set of resources needed to meet demand while respecting grid limits. NYISO's [day-ahead energy market](#) is a financially binding, security-constrained auction in which generators, loads, and other participants submit bids and offers for each hour of the following day. NYISO then runs an optimization that selects the least-cost portfolio of resources from those bids that can reliably meet forecasted demand given transmission limits and unit constraints, and the resulting locational marginal prices are used for settlement.

A useful way to picture the market is as a [stack of generator offers](#), with the cheapest megawatts at the bottom and progressively more expensive plants piled on top until the stack is high enough to meet NYISO forecast load. At that point, the most expensive marginal unit needed sets the clearing price for the zone. If the marginal unit must add a CO2 allowance cost to its bid, then the clearing price rises accordingly, increasing the price paid to all accepted generators in that market interval. Lower-emitting generators still incur their own allowance costs, but their revenues also increase because they are paid the higher clearing price, and non-emitting units receive the clearing-price increase as pure profit without any direct CO2 compliance cost.

RGGI Cost Estimate

This section documents how the spreadsheet converts the RGGI allowance price into a wholesale electricity cost and a typical residential bill impact. The calculation has three building blocks: (1) the direct cost of allowances for RGGI-affected unit emissions, (2) the fleet-wide average RGGI-affected unit CO2 rate, and (3) five representative clearing-unit types whose RGGI costs are apportioned to the share of the year that each type is assumed to set the clearing price.

Why the clearing unit matters

The fleet-wide average heat rate and CO2 rate blend every RGGI-affected unit in New York together, regardless of whether that unit ever sets the clearing price. In the NYISO market, however, it is not the average generator that determines the price consumers pay — it is the marginal unit, the last resource dispatched to meet load in a given interval. A fleet-wide average understates the allowance cost bid into the price when a less-efficient unit is on the margin and overstates it when an efficient combined cycle unit is on the margin. The fleet average also implicitly assumes that a RGGI-affected unit is on the margin in every hour, which is not the case. Hydro, wind, solar, imports, and other resources also set prices in some intervals. For these reasons the fleet-average estimate is treated as an upper bound, and the central estimate is built from representative unit types.

The five representative clearing-unit types

- **Modern CCGT** — the average of the newest, most efficient combined cycle units in the RGGI-affected fleet, Cricket Valley Energy Center and the Valley Energy Center (five units). These units have the lowest heat rate in the dataset (6.8–6.9 mmBtu/MWh in 2021–2025) and therefore the lowest CO2 rate, about 0.40 tons/MWh.
- **Steam boiler burning natural gas** — older, less efficient steam boilers firing pipeline natural gas (33 units). Heat rates are 10.0–10.9 mmBtu/MWh.
- **Steam boiler burning oil** — steam boilers firing residual oil (two units). Heat rates are 11.5–12.6 mmBtu/MWh and CO2 rates are 0.93–1.01 tons/MWh.
- **Combustion turbine burning natural gas** — gas-fired peaking combustion turbines (57–91 units depending on the year). Heat rates are 9.5–10.3 mmBtu/MWh.
- **Combustion turbine burning oil** — oil-fired peaking combustion turbines that typically run only during the highest-demand hours (54–72 units). Heat rates are 11.6–14.6 mmBtu/MWh, the least efficient units in the comparison.

For each representative type, the spreadsheet calculates the annual heat rate and CO2 rate from the EPA CAMPD data, multiplies the CO2 rate by the annual average allowance price to get an allowance cost per MWh, and converts that to ¢/kWh (Table 2). Older combined cycle units and a few other units are not assigned to a representative type. Their emissions are included in the direct allowance cost and the fleet-average estimate, but they are not used in the clearing-hours calculation described below.

Table 2: RGGI-Affected Unit Heat Rates and CO2 Rates by Representative Unit Type

Parameter	2021	2022	2023	2024	2025	2026*
RGGI-affected fleet						
Heat rate (mmBtu/MWh)	8.53	8.38	8.35	8.03	8.17	8.18
CO2 rate (tons/MWh)	0.515	0.507	0.498	0.477	0.487	0.487
Modern combined cycle (CCGT)						
Heat rate (mmBtu/MWh)	6.81	6.86	6.90	6.88	6.84	6.87
CO2 rate (tons/MWh)	0.405	0.405	0.405	0.402	0.401	0.403
Steam boiler burning natural gas						
Heat rate (mmBtu/MWh)	10.63	10.52	10.94	10.40	9.99	10.37
CO2 rate (tons/MWh)	0.642	0.643	0.654	0.620	0.603	0.622
Steam boiler burning oil						
Heat rate (mmBtu/MWh)	11.72	11.70	11.53	11.63	12.60	12.05
CO2 rate (tons/MWh)	0.938	0.940	0.927	0.935	1.005	0.966

Parameter	2021	2022	2023	2024	2025	2026*
Combustion turbine burning natural gas						
Heat rate (mmBtu/MWh)	9.86	10.04	9.58	9.50	10.33	9.82
CO2 rate (tons/MWh)	0.587	0.599	0.569	0.565	0.616	0.585
Combustion turbine burning oil						
Heat rate (mmBtu/MWh)	12.25	11.94	11.56	12.89	14.60	13.18
CO2 rate (tons/MWh)	0.923	0.865	0.831	0.944	1.069	0.960

* 2026 values are generation-weighted 2023–2025 averages (sum of heat input or CO2 divided by sum of gross load).

What the Potomac report shows

The September version had to assume how often each unit type sets the clearing price, because NYISO does not publish the price-setting unit for each interval. The Potomac Economics [Quarterly Report on the New York ISO Electricity Markets Second Quarter of 2026](#) (slide 25) reports how often each fuel type was on the margin and setting real-time prices in New York. In the second quarter of 2026 natural gas combined cycle units were marginal in 84% of intervals, other gas units in 28%, hydro in 25%, wind and solar in 24%, and oil in none. In the first quarter of 2026 combined cycle units were marginal in 67% of intervals, other gas units in 23%, and oil in 19%. In the second quarter of 2025 the values were 79% for combined cycle units, 49% for other gas units, and 1% for oil. The totals exceed 100% because more than one type of generator can be on the margin in an interval, particularly when a transmission constraint binds.

Three conclusions follow. First, combined cycle units set the price in a large majority of intervals, more than the 60% assumed in the September version. Second, oil units matter in some seasons and hardly at all in others, so a fixed 5% annual share is not supported. Third, RGGI-affected units do not set the price in every interval, so applying a RGGI cost to all Gold Book energy, as the fleet-average and single-unit-type estimates do, overstates the cost. The Potomac data are quarterly and real-time only, so they cannot be used directly as annual weights for 2021–2025, but they are used below to check the reasonableness of the revised approach.

Potomac (slide 23) uses the same basic cost calculation as the spreadsheet. The equivalent energy cost equals the RGGI price times 0.059 short tons per mmBtu times the unit heat rate for a gas-fired unit, and 0.081 short tons per mmBtu for an oil-fired unit. Potomac reports that rising RGGI prices increased marginal production costs by about \$9 per MWh compared to the second quarter of 2025. For a roughly \$20 per ton price increase and an efficient 7,500 Btu/kWh gas unit:

$$\text{\$/ton} \times 0.059 \text{ tons/mmBtu} \times 7.5 \text{ mmBtu/MWh} = \text{\$8.85/MWh}$$

That reproduces the Potomac estimate. The spreadsheet uses observed CO2 rates per MWh rather than an assumed emission factor and heat rate, but the two are mathematically equivalent: the CO2 rate per MWh equals the CO2 rate per mmBtu times the heat rate. Note that the \$9 per MWh is the incremental cost of the year-over-year price increase for an efficient gas unit, not the total RGGI cost at the 2026 allowance price.

Merit-order clearing hours

The revised spreadsheet replaces the fixed 60/35/5 weights with clearing hours derived from the average annual operating hours per unit of each representative type (Potomac tab). The approach is a merit-order stack: the most expensive type of unit that is operating sets the price during its operating hours. Ranking the five types by average operating hours per unit gives the same order in every year

from 2021 to 2025: combustion turbines burning oil run the fewest hours, followed by steam boilers burning oil, combustion turbines burning gas, steam boilers burning gas, and modern combined cycle units. The clearing hours for each type are:

- Combustion turbine oil = its average operating hours
- Steam boiler oil = its average operating hours minus the combustion turbine oil hours
- Combustion turbine gas = its average operating hours minus the steam boiler oil hours
- Steam boiler gas = its average operating hours minus the combustion turbine gas hours
- Modern CCGT = its average operating hours minus the steam boiler gas hours
- Non-RGGI resources = 8,760 hours minus the modern CCGT average operating hours. These hours are assigned to hydro, imports, renewables, and nuclear, with no RGGI cost.

Each type's clearing share equals its clearing hours divided by 8,760, and its apportioned energy equals the clearing share times the Gold Book energy. The shares add to 100% in every year, and the spreadsheet includes a check cell confirming that the apportioned energy adds back to the Gold Book total. Table 3 lists the results.

Table 3: Average Operating Hours, Clearing Hours, and Clearing Shares by Representative Unit Type

Parameter	2021	2022	2023	2024	2025	2026*
Modern combined cycle (CCGT)						
Average operating hours per unit	6,074	6,548	6,396	5,917	6,110	—
Clearing hours	3,598	4,085	4,039	3,340	3,231	—
Clearing share of the year	41.1%	46.6%	46.1%	38.1%	36.9%	40.2%
Steam boiler burning natural gas						
Average operating hours per unit	2,476	2,464	2,357	2,577	2,879	—
Clearing hours	1,868	1,696	1,774	1,743	1,809	—
Clearing share of the year	21.3%	19.4%	20.3%	19.9%	20.6%	20.3%
Steam boiler burning oil						
Average operating hours per unit	108	180	169	192	359	—
Clearing hours	9	87	109	136	214	—
Clearing share of the year	0.1%	1.0%	1.2%	1.6%	2.4%	1.8%
Combustion turbine burning natural gas						
Average operating hours per unit	608	768	583	834	1,071	—
Clearing hours	500	587	414	642	712	—
Clearing share of the year	5.7%	6.7%	4.7%	7.3%	8.1%	6.8%
Combustion turbine burning oil						
Average operating hours per unit	99	93	59	56	145	—
Clearing hours	99	93	59	56	145	—
Clearing share of the year	1.1%	1.1%	0.7%	0.6%	1.7%	1.0%
Non-RGGI resources (no RGGI cost)						
Hours	2,686	2,212	2,364	2,843	2,650	—
Share of the year	30.7%	25.2%	27.0%	32.5%	30.2%	30.0%

* 2026 shares are based on the 2023–2025 average apportioned Gold Book energy.

The apportioned RGGI cost for each type equals its apportioned energy times its RGGI allowance cost. The central market-impact estimate is the sum over the five types:

$$\text{Apportioned RGGI cost (\$ million)} = \Sigma [\text{Gold Book energy (GWh)} \times \text{clearing share} \times \text{CO}_2 \text{ rate (tons/MWh)} \times \text{allowance price (\$/ton)}] \div 1,000$$

This estimate is not added to the direct allowance cost. The September version of this document stated that the weighted wholesale adder was added to the direct allowance purchase cost to produce a total; the spreadsheet never did that, and doing so would double count the direct cost.

2026 projection

Complete 2026 emissions and auction data will not be available until early 2027. The 2026 projection holds all physical inputs at their 2023–2025 levels: Gold Book energy, RGGI-affected unit load and emissions, and each type’s apportioned energy are three-year averages, and heat rates and CO2 rates are generation-weighted three-year averages. The allowance price is set at \$35 per ton, the Auction 72 clearing price. Because every 2026 cost is proportional to the allowance price, the summary blocks also show the 2026 results at the 2026 year-to-date New York average price of \$31.99 per ton (Auctions 71–73) and at the Auction 73 clearing price of \$37.65 per ton.

Sensitivity and limitations

The revised central estimate depends on several simplifying assumptions. The most important are listed below. On balance I believe the central estimate is conservative.

- **Operating hours are not marginal hours.** A unit that is operating is not necessarily on the margin. The merit-order stack also assumes that the operating hours of each type nest inside those of the next cheaper type. Neither assumption can be tested without hourly NYISO data.
- **The non-RGGI share is probably too high.** The stack assigns 25%–33% of each year to resources with no RGGI cost and has modern combined cycle units setting the price in 37%–47% of the hours. Potomac found combined cycle units on the margin in 67%–84% of real-time intervals in the first half of 2026 and 79% in the second quarter of 2025. If more hours were assigned to RGGI-affected units, the central estimate would move toward the fleet-average upper bound.
- **Older combined cycle units are excluded from the stack.** Only the five modern CCGT units define the combined cycle operating hours. Older combined cycle units run many hours at heat rates near 7.8 mmBtu/MWh. Including them would increase both the RGGI clearing hours and the cost per MWh in those hours.
- **Annual rather than quarterly.** The Potomac data show that oil units were marginal in 19% of intervals in the first quarter of 2026 and none in the second quarter. An annual calculation smooths over these seasonal differences, which matter most during cold-weather and peak-load periods.
- **Single-type and fleet-average bounds.** Table 4 also shows the cost if each representative type set the price in every hour. These values bracket the possible range, and the fleet-average estimate is shown alongside the central estimate as an upper bound.

Total Annual RGGI Cost Estimate

Table 4 lists the total annual costs for each measure (NYS RGGI Cost Impacts Spreadsheet, Tab: Total Annual Costs). The “Total Direct RGGI Allowance Costs” row equals RGGI-affected unit CO2 emissions times the annual average allowance price. It is larger than the investments counted in the “6-to-1” claim (see the Source of the “6-to-1 return” Claim section below) because the claim only counts funds actually invested, but more importantly it does not reflect the cost that consumers pay through the wholesale market. When non-emitting and imported resources collect the clearing price that

incorporates the RGGI cost, costs increase sharply. The “if sets price all hours” rows show the cost if that unit type set the clearing price for all Gold Book energy; the “apportioned” rows apply each type’s cost only to its clearing share.

Table 4: Total Annual RGGI Costs (\$ millions)

Parameter	2021	2022	2023	2024	2025	2026*
Average allowance price (\$/ton)	\$9.64	\$13.46	\$13.58	\$20.14	\$21.81	\$35.00
Gold Book Table III-2a energy (GWh)	125,361	124,449	122,469	129,238	132,182	127,963
Direct allowance cost						
RGGI unit gross load (GWh)	55,106	60,290	57,532	64,921	67,087	63,180
RGGI unit CO2 emissions (tons)	28,370,370	30,586,148	28,656,857	30,979,144	32,684,241	30,773,414
Total direct RGGI allowance costs	\$274	\$412	\$389	\$624	\$713	\$1,077
Fleet average of RGGI units (upper bound)						
RGGI cost if fleet average sets price all hours	\$622	\$850	\$828	\$1,242	\$1,404	\$2,181
Modern combined cycle (CCGT)						
RGGI allowance cost (¢/kWh)	0.39	0.54	0.55	0.81	0.87	1.41
Cost if this type sets price all hours	\$489	\$678	\$673	\$1,048	\$1,155	\$1,803
Apportioned energy (GWh)	51,486	58,029	56,468	49,270	48,754	51,498
Apportioned cost	\$201	\$316	\$310	\$399	\$426	\$726
Steam boiler burning natural gas						
RGGI allowance cost (¢/kWh)	0.62	0.87	0.89	1.25	1.32	2.18
Cost if this type sets price all hours	\$776	\$1,077	\$1,088	\$1,615	\$1,740	\$2,788
Apportioned energy (GWh)	26,729	24,091	24,807	25,722	27,290	25,940
Apportioned cost	\$165	\$208	\$220	\$321	\$359	\$565
Steam boiler burning oil						
RGGI allowance cost (¢/kWh)	0.90	1.27	1.26	1.88	2.19	3.38
Cost if this type sets price all hours	\$1,133	\$1,575	\$1,542	\$2,435	\$2,897	\$4,324
Apportioned energy (GWh)	123	1,236	1,529	2,006	3,226	2,253
Apportioned cost	\$1	\$16	\$19	\$38	\$71	\$76
Combustion turbine burning natural gas						
RGGI allowance cost (¢/kWh)	0.57	0.81	0.77	1.14	1.34	2.05
Cost if this type sets price all hours	\$709	\$1,004	\$947	\$1,470	\$1,775	\$2,618
Apportioned energy (GWh)	7,158	8,346	5,787	9,465	10,744	8,665
Apportioned cost	\$40	\$67	\$45	\$108	\$144	\$177
Combustion turbine burning oil						
RGGI allowance cost (¢/kWh)	0.89	1.16	1.13	1.90	2.33	3.36
Cost if this type sets price all hours	\$1,116	\$1,449	\$1,381	\$2,457	\$3,083	\$4,300
Apportioned energy (GWh)	1,421	1,324	829	829	2,188	1,282
Apportioned cost	\$13	\$15	\$9	\$16	\$51	\$43
Potomac-informed marginal units (central estimate)						
Sum of apportioned costs	\$421	\$623	\$604	\$882	\$1,051	\$1,587

* 2026 projected at \$35 per ton with 2023–2025 average operating data.

The article uses the direct allowance cost, the Potomac-informed marginal-unit central estimate, and the fleet-average upper bound (Table 5). Between 2021, when Governor Hochul took office, and 2025 the central estimate increased from \$421 million to \$1,051 million, or 2.5 times. The 2026 projection at \$35 per ton is \$1,587 million, 3.8 times the 2021 cost.

Table 5: Total Annual RGGI Costs (\$ millions) Extracted from Table 4 for Article

Measure	2021	2022	2023	2024	2025	2026 @ \$35	2026 @ \$31.99	2026 @ \$37.65
Total direct RGGI allowance costs	\$274	\$412	\$389	\$624	\$713	\$1,077	\$984	\$1,159
Potomac-informed marginal units	\$421	\$623	\$604	\$882	\$1,051	\$1,587	\$1,451	\$1,707
Fleet average of RGGI units	\$622	\$850	\$828	\$1,242	\$1,404	\$2,181	\$1,994	\$2,347

\$31.99 is the 2026 year-to-date New York average price (Auctions 71–73); \$37.65 is the Auction 73 clearing price.

Residential RGGI Costs

Table 6 lists the annual residential costs of RGGI (NYS RGGI Cost Impacts Spreadsheet, Tab: Customer Costs) for a typical customer using 6,840 kWh per year. The September version estimated the residential direct allowance cost by multiplying a fleet-rate bill impact by the 36.5% residential share of statewide load. Because the annual energy use is already for a single residential customer, that factor understated the per-customer cost and has been removed. The direct allowance cost per customer now equals the total direct allowance cost divided by Gold Book energy, times the customer's annual use. The market-impact measures apply the fleet-average or apportioned RGGI cost per kWh to the customer's annual use. In 2025 the direct allowance cost added \$37 to a typical residential bill, but the central estimate was \$54 and the upper bound was \$73, so the true cost of RGGI was underestimated by \$17 to \$36 when the wholesale electric cost impact was not factored in.

Table 6: Annual Residential RGGI Costs (\$ per customer per year)

Parameter	2021	2022	2023	2024	2025	2026*
Direct allowance cost						
Direct cost spread over Gold Book energy	\$14.93	\$22.63	\$21.73	\$33.03	\$36.89	\$57.57
Fleet average of RGGI units (upper bound)						
Bill impact if fleet average sets price all hours	\$33.95	\$46.71	\$46.26	\$65.74	\$72.68	\$116.61
Modern combined cycle (CCGT)						
Bill impact if this type sets price all hours	\$26.71	\$37.26	\$37.58	\$55.44	\$59.79	\$96.39
Apportioned bill impact	\$10.97	\$17.37	\$17.33	\$21.14	\$22.05	\$38.79
Steam boiler burning natural gas						
Bill impact if this type sets price all hours	\$42.32	\$59.19	\$60.78	\$85.47	\$90.02	\$149.01
Apportioned bill impact	\$9.02	\$11.46	\$12.31	\$17.01	\$18.58	\$30.21
Steam boiler burning oil						
Bill impact if this type sets price all hours	\$61.83	\$86.57	\$86.13	\$128.88	\$149.93	\$231.16
Apportioned bill impact	\$0.06	\$0.86	\$1.08	\$2.00	\$3.66	\$4.07
Combustion turbine burning natural gas						
Bill impact if this type sets price all hours	\$38.69	\$55.18	\$52.88	\$77.78	\$91.84	\$139.94
Apportioned bill impact	\$2.21	\$3.70	\$2.50	\$5.70	\$7.47	\$9.48
Combustion turbine burning oil						
Bill impact if this type sets price all hours	\$60.89	\$79.65	\$77.15	\$130.01	\$159.51	\$229.83
Apportioned bill impact	\$0.69	\$0.85	\$0.52	\$0.83	\$2.64	\$2.30
Potomac-informed marginal units (central estimate)						
Sum of apportioned bill impacts	\$22.95	\$34.24	\$33.73	\$46.68	\$54.40	\$84.85

* 2026 projected at \$35 per ton with 2023–2025 average operating data.

Table 7 extracts the article values and shows each as a share of the typical 2024 residential bill of \$1,674 per year. Between 2021 and 2025 the central estimate increased from \$22.95 to \$54.40 per year, or 2.4 times. At \$35 per ton the 2026 central estimate is \$84.85 per year and the upper bound is \$116.61, or 5.1% to 7.0% of a typical residential bill.

Table 7: Annual Residential RGGI Costs Extracted from Table 6 for Article

Measure	2021	2022	2023	2024	2025	2026 @ \$35	2026 @ \$31.99	2026 @ \$37.65
Total direct RGGI allowance costs	\$14.93	\$22.63	\$21.73	\$33.03	\$36.89	\$57.57	\$52.62	\$61.93
Potomac-informed marginal units	\$22.95	\$34.24	\$33.73	\$46.68	\$54.40	\$84.85	\$77.55	\$91.27
Fleet average of RGGI units	\$33.95	\$46.71	\$46.26	\$65.74	\$72.68	\$116.61	\$106.58	\$125.43
Share of typical annual bill								
Direct allowance cost	0.9%	1.4%	1.3%	2.0%	2.2%	3.4%	3.1%	3.7%
Marginal units (central)	1.4%	2.0%	2.0%	2.8%	3.2%	5.1%	4.6%	5.5%
Fleet average (upper)	2.0%	2.8%	2.8%	3.9%	4.3%	7.0%	6.4%	7.5%

Bill shares use the EIA 2024 average New York residential bill of \$139.53 per month for every year.

Source of the "6-to-1 return" Claim

I have written about the [implications of the New York approval of RGGI amendments](#) which finalized New York's alignment with the RGGI Third Program Review Model Rule on August 5, 2026. This documents the [press release](#) claim associated with the approval that:

Net savings are expected to reach nearly [\\$12 billion](#) over the lifetime of the investments, providing a nearly 6-to-1 benefit based on investment of about \$2 billion to date.

The “about \$2 billion to date” value is from Table 4, “Available Funding and Financial Status through December 31, 2024 (Millions of Dollars)” in [NYSERDA RGGI Semiannual Status Report through December 31, 2024](#). Table 1 in the same document states that the expected lifetime total savings for the expended funds is \$12,183.9 million. This benefit cost ratio only considers the ratepayer costs of RGGI allowance auction investments.

Table 8: NYSDA Table 1. Summary of Expected Cumulative Portfolio Benefits through December 31, 2024

Benefits through December 31, 2024 ^a	Net Greenhouse Gas Emission Savings ^b (Tons CO ₂ e ^c)	Total Net Fuel Savings (MMBtu)	Net Efficiency Electricity Savings (MWh)	Net Renewable Energy Generation (MWh)	Total Net Electricity Savings/Generation (MWh)	Energy Bill Savings to Participating Customers (\$ Million)
Cumulative Annual Installed Savings ^d	2,094,817	16,419,238	1,121,942	644,851	1,766,792	\$779.6
Cumulative Annual Pipeline Savings ^e	126,940	1,586,843	36,685	47,219	83,903	\$20.4
Cumulative Annual Committed Savings ^f	2,221,757	18,006,081	1,158,626	692,070	1,850,696	\$800.0
Expected Lifetime Total Savings ^g	38,004,105	259,648,763	24,706,920	14,531,862	39,238,782	\$12,183.9

^a Cross-program overlap for projects that received any combination of a Green Jobs - Green New York (GJGNY) assessment, a GJGNY loan, or a RGGI-funded incentive through the Home Performance with ENERGY STAR® Program, NY-Sun Program or Renewable Heat NY Program has been removed.

^b These emission reductions are associated with both electric and fossil-fuel saving measures. Under a cap-and-trade system, the total number of emission allowances is determined by regulation. Regulated entities can purchase allowances and collectively emit up to the cap that is currently in place. Therefore, in the near term, electric efficiency projects may not decrease the overall amount of emissions going into the atmosphere. However, electric efficiency projects will reduce end users' responsibility or footprint associated with emissions from electricity production.

^c CO₂e stands for carbon dioxide equivalent and describes the amount of CO₂ that would have the same global warming potential as a given mixture of gases based on factors published by the Intergovernmental Panel on Climate Change.

^d Inclusive of savings from all currently operational projects installed since program inception.

^e Inclusive of savings from all projects under a signed contract and projects with an application received that are not yet operational.

^f The sum of savings from Installed Savings and Pipeline Savings.

^g The expected benefits over the lifetime of all operational projects, projects under a signed contract, and projects with an application received that are not yet operational. See Table A-4 in appendix A for the measure-life assumptions.

Data Documentation

Auction 73 (September 9, 2026) New York results are from the RGGI [New York proceeds by auction](#) file: 6,970,201 allowances sold for \$262,428,067.65. The September version also used the 36.5% residential share of 2022 statewide load; this revision no longer uses it.

A typical New York residential electric customer uses approximately **570 kWh per month** (about **6.8 MWh annually**). [EIA monthly residential bill](#)

The average New York residential bill was \$139.53 per month in 2024 ([EIA Table 5A](#)).

The consistent source of residential electric customers is EIA’s annual state retail-sales/customer series.. EIA’s annual [Form 861](#) is the appropriate dataset because it is a census of U.S. electric utilities and includes annual customer counts by state and sector. US EIA [electric sector](#) data. The following data were extracted by Perplexity.

Year	Residential electric customers/accounts	Rounded
2009	7,427,503	7.428 million
2010	7,430,810	7.431 million
2011	7,438,878	7.439 million
2012	7,448,536	7.449 million
2013	7,463,609	7.464 million
2014	7,477,708	7.478 million
2015	7,490,601	7.491 million
2016	7,500,057	7.500 million
2017	7,513,618	7.514 million
2018	7,528,433	7.528 million
2019	7,543,787	7.544 million
2020	7,561,770	7.562 million
2021	7,576,762	7.577 million
2022	7,589,304	7.589 million
2023	7,603,344	7.603 million
2024	7,420,214	7.420 million
2025	Not yet final in annual EIA-861	—