

Caiazza Comments on 2025 RGGI Operating Plan Amendment Update

Introduction

I am submitting these comments on the New York Research & Development Authority (NYSERDA) Regional Greenhouse Gas Initiative (RGGI) [Operating Plan Amendment](#) (“Amendment”) for 2025 because the Plan needs to be re-focused with more emphasis on programs that directly, indirectly, or potentially reduce carbon dioxide (CO₂) from the electric generating units affected by RGGI. There are multiple programs in the amendment that do not fulfill that need. Failure to fully support emission reductions at RGGI-affected sources threatens the ability to achieve the emission reduction mandates of RGGI and the Climate Leadership & Community Protection Act (Climate Act).

I have been involved in the RGGI program process since it was first proposed prior to 2008. I follow and write about the [details of the RGGI program](#) because its implementation affects whether I will be able to continue to live in New York. I have extensive experience with air pollution control theory, implementation, and evaluation having worked on every cap-and-trade program affecting electric generating facilities in New York including the Acid Rain Program, Regional Greenhouse Gas Initiative (RGGI) and several Nitrogen Oxide programs. The opinions expressed in these comments do not reflect the position of any of my previous employers or any other organization I have been associated with, these comments are mine alone.

Summary

NYSERDA has never acknowledged there is a disconnect between RGGI emission reduction requirements and its Operating Plan investments. Future emission reductions in the electric sector affected by RGGI cannot rely on fuel-switching emission reductions and retirements that have been responsible for most of the historic reductions. Instead, fossil-fueled generation must be displaced by zero-emissions generation. That obligation must receive adequate funding, or it will be impossible to meet the RGGI reduction requirements forcing affected sources to reduce operations or shut down. I have also included a discussion of the stakeholder process because I have raised these issues in the past.

NYSERDA Operating Plan

NYSERDA designed and implemented a process to develop and [annually update an Operating Plan](#) which summarizes and describes the initiatives to be supported by RGGI auction proceeds. The latest [Draft RGGI Operating Plan Amendment](#) explains that

New York State invests RGGI proceeds to support comprehensive strategies that best achieve the RGGI greenhouse gas emissions reduction goals pursuant to 21 NYCRR Part 507.

The programs in the portfolio of initiatives are designed to support the pursuit of the State's greenhouse gas emissions reduction goals by:

- Deploying commercially available energy efficiency and renewable energy technologies;
- Building the State's capacity for long-term carbon reduction;
- Empowering New York communities to reduce carbon pollution, and transition to cleaner energy;
- Stimulating entrepreneurship and growth of clean energy and carbon abatement companies in New York; and
- Creating innovative financing to increase adoption of clean energy and carbon abatement in the State.

NYSERDA Operating Plan Amendment Stakeholder Process

On an annual basis, the Authority "engages stakeholders representing the environmental community, the electric generation community, consumer benefit organizations and interested members of the general public to assist with the development of an annual amendment to the Operating Plan." Based on results, however, this engagement is in name only. NYSERDA's treatment of the stakeholder requirement is that it is simply an obligation and not an opportunity.

For example, I participated in the Advisory Stakeholder [meeting](#) held on December 5, 2024. The meeting exemplified the obligatory approach because when NYSERDA staff responded to questions there was no suggestion of any interest in the reason for the question.

I asked [one relevant question](#): How will NYSERDA address the need to make the necessary reductions to meet RGGI goals relative to the proposed investments recommended in the draft plan? Two people responded. The first explained:

I'm happy to take this one and provide the best answer as I can. RGGI itself is the cap-and-invest program for the power sector. Proceeds generated from that program are then invested across multiple sectors by NYSERDA in order to help us achieve our market transformation that we're really trying to get to align with the goals of the Climate Act. We certainly not only seek to invest in programs that are providing those really low cost carbon reductions but also pursue the full complement of carbon reduction strategies across multiple sectors. We're trying to use these funds not only through direct investments but also to complement other funding sources that NYSERDA has access to and to really just leverage as much as we can to have the biggest impact. We are looking to drive some of those costs down. NYSERDA does regularly post RGGI status reports that offer more information about the carbon benefits

associated with each of these programs and the budgets associated with each. I point anyone who's interested to learn more about those impacts to NYSERDA website and the details posted there.

The entire response talks about how RGGI proceeds are invested. I do not think that there is any recognition that RGGI also includes compliance obligations. In these comments and all my earlier comments, I have argued that NYSERDA Operating Plan funding priorities over emphasize Climate Leadership and Community Protection Act (Climate Act) initiatives at the expense of the electric generating unit RGGI emission compliance requirements. Another individual also responded to my question.

Just to add on a bit to that with your education program officer here. I just know that RGGI is only one piece of what we do and one of our goals is really to catalyze private investments through market animating type of interventions and drive down the cost of carbon emission reductions from a variety of technologies. It's not really our assumption that New York State will need to pay for all of the greenhouse gas emission reductions to meet our goals. I just wanted to make that clear.

The reason for this question is my concern about compliance obligations. These responses do not acknowledge that there are any RGGI program considerations other than generating money and investing it wisely. Hopefully, Staff will read these comments to expand their horizons.

NYSERDA emphasizes its use of stakeholder engagement when publicly discussing their work. At the December 18, 2024 Assembly Public Hearing on NYSERDA Spending and Program Review, John Williams, [referred](#) to stakeholder input. He said: "Our work is informed by stakeholder engagement and market research." When describing the disposition of \$191 million budget item for RGGI allowance sales, he said: "The investments for those funds are informed by a stakeholder process."

I have participated in this process submitting comments on the Operating Plan since the 2001 plan and think that it is important to describe your stakeholder engagement. The reality is that NYSERDA goes through the motions of a stakeholder process. The NYSERDA Board only hears what the staff wants them to hear before they rubber stamp the approval of the Operating Plan. I published an [article in February 2023](#) describing the approval process which exemplifies the process for every year that I have commented. I concluded that the only indication that someone read my comments is that I pointed out a typographical error that was corrected. There is no evidence supporting the John Williams claim to the Board that "The proposal you have was you know, does take those public feedback into account". The fact is that the recommendations of the two written comments were ignored.

I believe there are two missing pieces in the NYSERDA public stakeholder process. A published response to comments document like the Department of Environmental Conservation regulatory mandate is the first thing needed to instill confidence in the stakeholder process. The second piece is to take the stakeholder engagement response to comments seriously. For an example of how stakeholder engagement should be done, the Santa Clara County Rapid Transit Development Project includes a master plan for transportation for Silicon Valley. An interview with the founding manager notes: “Part of the plan is a four-year public stakeholder review process. In the reviews, if the public came up with good ideas, the ideas went into the plan. If an idea wasn’t good, we had the responsibility of explaining why.”¹

I believe this approach would significantly improve NYSERDA public engagement. I would add one other thing. There might be issues that need to be resolved by further interaction so there should be a process for continued dialogue between NYSERDA and stakeholders. It may be that no resolution is possible for a particular issue. In that case, the documentation provided to the Board should note that the issue was not resolved and explain why. The Board of Directors needs to know if there are any issues of this type to make informed decisions.

Compliance Concern

In the next sections I will explain why NYSERDA Operating Plan funding priorities need to consider electric generating unit RGGI emission compliance requirements. I describe historical electric generating unit emission trends, the historical NYSERDA investments, the investments and resulting emission savings claimed in the NYSERDA status reports, the proposed Operating Plan Amendment program investments, and I will summarize the impacts on RGGI compliance.

Historical Emissions

My concern about future emission reductions is rooted in the observed trend of New York electric utility emissions. EPA’s [Clean Air Markets Division](#) maintains a database of all the emissions data collected by every power plant in the United States since the mid-1990’s. I used that data to show the emissions trend.

The EPA database includes information such as the primary fuel type of each generating unit. Table 1 lists the total annual CO₂ data from all New York units that are required to report to EPA for any air pollution control program by fuel type. In 2000, New York EGU emissions were 57,114,439 tons and in 2023 they were 28,889,913 tons, a decrease of 49%. Figure 1 plots these data.

¹ “California’s High-Speed Rail Visionary” Bill Buchanan, *Trains*, Volume 85, No. 1, January 2025, pages 30-37.

Table 1: New York Clean Air Markets Division Emissions Data for All Regulatory Programs

Year	CO2				
	Total	Coal	Oil	Natural Gas	Other
2000	57,114,439	25,546,641	22,488,241	9,079,557	0
2001	53,195,854	23,519,892	20,636,551	9,039,411	0
2002	51,546,524	24,073,494	17,924,260	9,548,770	0
2003	53,240,989	24,491,989	19,789,015	8,959,985	0
2004	55,125,941	23,673,988	19,574,349	11,877,605	0
2005	56,018,928	22,348,515	20,163,454	13,506,959	0
2006	47,912,271	22,183,541	10,487,480	15,241,249	0
2007	49,575,411	21,884,899	10,732,639	16,957,873	0
2008	42,844,448	18,679,355	8,515,621	15,205,001	444,472
2009	38,295,368	13,637,433	6,394,482	18,055,052	208,400
2010	42,563,848	14,950,792	6,716,334	20,808,056	88,666
2011	37,445,417	10,394,280	4,211,763	22,839,373	0
2012	35,800,053	5,030,164	4,358,456	26,224,818	186,615
2013	33,991,141	5,463,637	3,881,089	24,571,753	74,661
2014	34,692,016	4,667,127	3,581,905	25,785,100	657,883
2015	33,271,716	2,229,725	3,984,125	26,457,826	600,041
2016	31,440,500	1,588,950	1,934,603	27,301,230	615,717
2017	25,302,086	763,861	929,648	22,981,721	626,856
2018	28,025,772	703,377	1,567,127	25,119,035	636,234
2019	24,903,924	471,969	868,516	23,019,716	543,723
2020	26,920,636	174,360	476,741	25,675,000	594,535
2021	28,558,685	0	325,270	27,619,633	613,781
2022	30,818,867	0	604,475	29,707,409	506,983
2023	28,889,913	0	316,176	28,429,838	143,899

Figure 1: New York State Emissions by Fuel Type

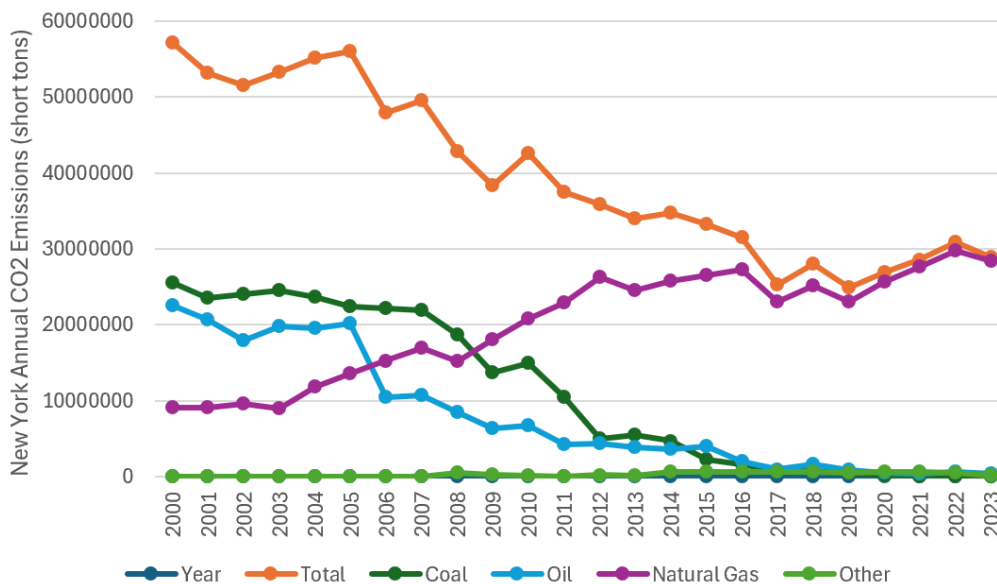


Table 2 lists the reductions in New York since the start of RGGI. I calculated a pre-RGGI baseline by averaging annual data from 2006-2008. NYS 2023 CO2 emissions are 38% lower than RGGI baseline emissions. Note that the reduction percentage peaked in 2019 before Indian Point shut down and emissions increased. The most important feature of these tables is that coal and oil emission reductions are the primary drivers of the total emission reductions. Natural gas has increased to cover the generation from those fuels but because it has lower CO2 emission rates the New York emissions have gone down.

Table 2: New York State Emission Reductions

Range	Units	CO2 Reductions from 2000 to 2023				
		Total	Coal	Oil	Natural Gas	Other
2000- 2023	Mass	-28,224,526	-25,546,641	-22,172,065	19,350,281	
	%	-49.4%	-100.0%	-98.6%	213.1%	

Year	RGGI CO2 Reductions		
	Annual	Delta	%
Baseline	46,777,377		
2009	38,295,368	-8,482,009	-18.1%
2010	42,563,848	-4,213,528	-9.0%
2011	37,445,417	-9,331,960	-19.9%
2012	35,800,053	-10,977,324	-23.5%
2013	33,991,141	-12,786,235	-27.3%
2014	34,692,016	-12,085,361	-25.8%
2015	33,271,716	-13,505,660	-28.9%
2016	31,440,500	-15,336,877	-32.8%
2017	25,302,086	-21,475,291	-45.9%
2018	28,025,772	-18,751,604	-40.1%
2019	24,903,924	-21,873,452	-46.8%
2020	26,920,636	-19,856,741	-42.4%
2021	28,558,685	-18,218,692	-38.9%
2022	30,818,867	-15,958,509	-34.1%
2023	28,889,913	-17,887,464	-38.2%

NYSERDA RGGI Funding Emission Savings

The estimated emission savings from NYSERDA investments are described in the [Semi-Annual Status Report through December 2023](#). The description states that:

This report is prepared pursuant to the State’s RGGI Investment Plan (2022 Operating Plan) and provides an update on the progress of programs through the quarter ending December 31, 2023. It contains an accounting of program spending; an estimate of program benefits; and a summary description of program activities, implementation,

and evaluation. An amendment providing updated program descriptions and funding levels for the 2022 version of the Operating Plan was approved by NYSERDA’s Board in January 2023.

Table 3 is a copy of Table 1 in the latest Semi-Annual Status Report summarizes the effectiveness of the NYSERDA investments and lists expected cumulative portfolio benefits including emissions savings. This report notes that NYSERDA “begins tracking program benefits once project installation is complete and provides estimated benefits for projects under contract that are not yet operational (pipeline benefits).” There is an important distinction between the cumulative annual committed savings and the expected lifetime total benefits. For the purposes of this analysis, I did not use “lifetime” savings data because I am trying to compare the RGGI program benefits emission savings reductions to the RGGI compliance metric of an annual emission cap. Lifetime reductions are clearly irrelevant to that metric. Note that the Climate Act emission reduction metrics are annual emissions relative to a 1990 baseline so expected lifetime benefits are irrelevant.

Table 3. Summary of Expected Cumulative Portfolio Benefits through December 31, 2023

Benefits through December 31, 2023 ^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	1,870,066	12,732,474	1,221,070	617,092	1,838,162	\$657.5
Cumulative Annual Pipeline Savings ^e	106,034	834,197	69,203	52,818	122,021	\$22.7
Cumulative Annual Committed Savings ^f	1,976,101	13,566,671	1,290,272	669,910	1,960,182	\$680.2
Expected Lifetime Total Savings ^g	34,493,034	203,776,474	25,345,140	14,132,657	39,477,797	\$11,085.8

- ^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.

Comparison of NYSERDA Cumulative Emissions Savings to Observed Emission Reductions

Table 4 presents the relevant data to compare the observed reductions and NYSERDA RGGI investment emission savings. I list the last five years of data starting in 2019 when the emissions

went up because of the closure of Indian Point. Reductions from the 2006-2008 average baseline are listed. The emissions savings listed are cumulative annual emissions. If the RGGI proceeds were invested, then the total emissions would be higher by the amount of the savings. The total cumulative annual emission savings through the end of 2023 is only 1,976,101 tons and that represents a reduction of 4.2% from the pre-RGGI baseline. Emission reductions by fuel type clearly show that fuel switching is the primary cause of reductions.

Table 4: NY Electric Generating Unit Emissions, NYSERDA GHG Emission Savings from RGGI Investments, and Emissions by Fuel Type

	Total New York CO2 Emissions (tons)	Cumulative RGGI Net		CO2 Emissions By Fuel Type			
		Annual	Total Emissions Without RGGI	Coal	Oil	Natural Gas	Other
Baseline	46,777,377		46,777,377	20,915,932	9,911,913	15,801,374	148,157
2019	24,903,924	977,422	25,881,346	471,969	868,516	23,019,716	543,723
2020	26,920,636	1,246,651	28,167,287	174,360	476,741	25,675,000	594,535
2021	28,558,685	1,446,937	30,005,622	0	325,270	27,619,633	613,781
2022	30,818,867	1,731,823	32,550,690	0	604,475	29,707,409	506,983
2023	28,889,913	1,976,101	30,866,014	0	316,176	28,429,838	143,899
Delta	-17,887,464	1,976,101	-15,911,363	-20,915,932	-9,595,737	12,628,464	-4,259
% Reductions	-38.2%	-4.2%		-44.7%	-20.5%	27.0%	0.0%

State agencies have never acknowledged the findings that show RGGI has had very little to do with the observed emission reductions. For example, at the [NYSERDA RGGI Stakeholder meeting](#) on 5 December 2024, Jon Binder from the New York Department of Environmental Conservation [said](#):

Together, we have cut New York's power sector emissions of carbon dioxide by more than 50 %. And we've done this by establishing regulations that set limits on pollution while also making investments through this operating plan process in parallel with so many other critical policies at the state level and commitments to implement the Climate Leadership and Community Protection Act.

These results have also been ignored in the 2025 Operating Plan Amendment.

New York RGGI Program Investment Reductions

Another finding that has been ignored is the poor emission reduction cost effectiveness of NYSERDA investments. Table 5 lists data from [Semi-Annual Status Report through December 2023's](#) Table 2: Summary of Total Expected Cumulative Annual Program Benefits including the

cumulative annual costs of investment programs and annual tons of carbon dioxide equivalent (CO2e) saved by the investments.. The report notes that: “NYSERDA begins tracking program benefits once project installation is complete and provides estimated benefits for projects under contract that are not yet operational (pipeline benefits).” The report presents “expected quantifiable benefits related to carbon dioxide equivalent (CO2e) reductions, energy savings, and participant energy bill savings with expended and encumbered funds” but I only consider the CO2e reductions. Note that the emission savings evaluated in the report include carbon dioxide, methane, and nitrous oxide. In the original table “lifetime” savings are included. I did not use “lifetime” savings data because I am trying to compare the RGGI program benefits emission savings reductions to the RGGI compliance metric of an annual emission cap. Lifetime reductions are clearly irrelevant. The observed cost per ton of emissions savings is \$582.

Table 5: RGGI Funding Status Report Table 2: Summary of Total Expected Cumulative Annual Program Benefits

Through Date	Cumulative Costs (\$ millions)			Savings (Cumulative Annual Tons CO2e)			Cost Benefit Ratio (\$/Ton CO2e)
	Total Incentives	Associated Costs	Combined Costs	Installed Savings	Pipeline Savings	Total Savings	\$ per ton CO2 savings
12/31/2023	\$1,009.9	\$139.5	\$1,149.4	1,870,066	106,034	1,976,101	\$582

NYSERDA RGGI proceed investments can produce CO2 emission savings from RGGI-affected electric generating units in two ways: directly by displacing natural gas generation by deploying zero-emissions resources or indirectly by reducing the amount of load that the affected units must provide. I assumed that the indirect investments reduced load that directly offset RGGI-affected sources. This has been a good assumption because load growth has been stalled but with electrification of buildings and transportation and the addition of data centers and large load centers, the presumption that indirect NYSEDA investments will reduce emissions will become weak.

NYSERDA Historical RGGI Funding Priorities

Table 5 overestimates relevant savings because of RGGI funding program priorities. The [Semi-Annual Status Report through December 2023](#) describes the funding priorities for the auction proceeds:

The State invests RGGI proceeds to support comprehensive strategies that best achieve the RGGI CO2 emission reduction goals. These strategies aim to reduce global climate change and pollution through energy efficiency, renewable energy, and carbon abatement technology. Deploying commercially available renewable energy and energy efficiency technologies help to reduce greenhouse gas (GHG) emissions from both

electricity and other energy sources in the short term. To move the State toward the goals enacted by the Climate Leadership and Community Protection Act (Climate Act) and a more sustainable future, RGGI funds are used to empower communities to make decisions that prompt the use of cleaner and more energy-efficient technologies that lead to both lower carbon emissions as well as economic and societal co-benefits. RGGI helps to build capacity for long-term carbon reduction by training workers and partnering with industry. Using innovative financing, RGGI supports the pursuit of cleaner, more efficient energy systems and encourages investment to stimulate entrepreneurial growth of clean energy companies. All these activities use funds in ways that accelerate the uptake of low- to zero-emitting technologies.

Table 5 is misleading in the context of RGGI compliance obligations because not all the savings will affect RGGI emission sources. There is a significant fraction of RGGI funds that goes to programs that increase rather than decrease electric generating unit emissions.

In Table 6, I categorized programs relative to RGGI compliance obligations based on the Status Report. The table breaks down the program allocations and expected annualized CO₂ savings for three categories: direct reductions to RGGI sources, indirect reductions, and those programs that will actually increase electric generating emissions. For example, Charge NY is NYSERDA's Clean Transportation Program that "has been pursuing five strategies to promote EV adoption by consumers and fleets across New York". The results in the Funding status reports show that since the start of the program NYSERDA has allocated \$98.8 million to programs that directly reduce utility emissions achieving emission savings of 199,733 tons, \$702.7 million for programs that indirectly reduce utility emissions savings by 1,205,780 tons, and \$348.1 million for programs that will increase utility emissions by 678,804 tons. In the last category, the GHG emission savings listed are the benefits for programs that facilitate switching from gasoline and diesel to electric vehicles. When those savings that do not affect RGGI source emissions are removed, total savings are 1,297,297 and the emissions from RGGI sources in New York would have been only 2.8% higher if the NYSERDA program investments did not occur.

Table 6: Summary of Expected Cumulative Annualized Program Benefits through 31 December 2023 for Programs that Directly, Indirectly, or Do Not Affect RGGI CO2 Emissions

Program	Programs that Directly Displace CO2 Emissions		Programs that Indirectly Displace CO2 Emissions		Programs that Do Not Directly Affect RGGI Emissions	
	Costs (millions of dollars)	Net Greenhouse Gas Emission Savings (Annualized Tons CO2e)	Costs (millions of dollars)	Net Greenhouse Gas Emission Savings (Annualized Tons CO2e)	Costs (millions of dollars)	Net Greenhouse Gas Emission Savings (Annualized Tons CO2e)
	Total Costs	Total Committed Savings			Total Costs	Total Committed Savings
Renewable Energy						
NY-Sun Initiative Statewide Customer Incentives	\$33.7	30,940				
NY-Sun Long Island Incentives	\$5.5	3,602				
NY-Sun Long Island SEEF Incentives	\$54.3	114,395				
Renewable Heat New York			\$10.3	2,477		
NYSERDA Solar Electric	\$5.3	50,796				
Energy Efficiency						
LIPA Energy Efficiency and Renewable Energy Initiative			\$289.6	646,714		
EmPower Plus			\$88.9	44,454		
Community Thermal Energy Networks			\$10.5	0		
Multifamily Performance Program			\$14.8	41,430		
Multifamily Carbon Emissions Reduction Program			\$5.9	45,151		
Solar Hot Water (Thermal) Program			\$4.2	959		
Green Residential Building Program			\$2.8	2,798		
Innovative GHG Abatement Strategies						
Charge NY					\$217.1	236,734
Community Clean Energy						
Regional Economic Development & GHG Reduction					\$10.2	34,018
Clean Energy Communities					\$3.8	176,215
Directed						
Clean Energy Fund					\$117.0	231,837
Green Jobs - Green New York			\$275.7	421,797		
Cross-Program Overlap						
TOTAL Annualized Cumulative	\$98.8	199,733	\$702.7	1,205,780	\$348.1	678,804

RGGI Compliance and Draft Operating Plan Amendments

NYSERDA’s five investment goals “support the pursuit of the State’s greenhouse gas emissions reduction goals” but only one addresses emission reductions. The others are vague cover language to justify the use of RGGI auction proceeds to bury administrative expenses, force ratepayers to cover costs related to Climate Act implementation and provide funding for politically favored projects at the expense of programs that affect CO₂ emissions from RGGI affected sources. This section determines how much funding is allocated to reducing emissions in the 2025 Draft Amendment.

Table 1 from the 2025 Draft RGGI Operating Plan Amendment lists all the proposed programs. The original table highlights programs that “indicate newly funded programs or additional funding to existing programs”. The notes to the table also explain that “Totals may not sum exactly due to rounding and that the fiscal years begin on April 1st and end on March 31st. The Draft Amendment document provides brief descriptions of the proposed programs in most instances, but not all the programs have descriptions.

Table 7: Draft RGGI Operating Plan Amendment Table 1: Funding Allocations with Totals for this Planning Period

Table 1: Funding Allocations with Totals for this Planning Period

Category	Program	FY 24-25	FY 25-26	FY 26-27	FY 27-28	Total (This Planning Period)
Renewable Energy	NY-Sun Statewide Customer Incentives	20,000,000	-	9,000,000	-	29,000,000
	NY-Sun Long Island SEEF Incentives	1,000,000	4,000,000	5,000,000	5,000,000	15,000,000
	Residential PV Plus Storage	3,000,000	-	-	-	3,000,000
	Agrivoltaics	5,000,000	7,000,000	10,000,000	-	22,000,000
	Circular Economy Renewable Energy Feasibility Study	1,000,000	-	-	-	1,000,000
Energy Efficiency / Building Electrification	LIPA Efficiency and RE	20,000,000	20,000,000	20,000,000	20,000,000	80,000,000
	EmPower+	30,000,000	46,250,000	30,250,000	45,250,000	151,750,000
	Comfort Home	6,500,000	-	-	-	6,500,000
	Pilot Projects with Municipal Utilities	-	1,000,000	1,000,000	-	2,000,000
	Disadvantaged Communities Schools/Buildings	42,500,000	40,000,000	30,000,000	-	112,500,000
	Multifamily Low Carbon Capital Planning / Pathway Projects	3,000,000	12,000,000	10,000,000	5,000,000	30,000,000
	Community Thermal Energy Networks	3,000,000	4,000,000	2,000,000	-	9,000,000
	Building Retrofit and New Construction Challenges	42,500,000	42,500,000	43,000,000	15,000,000	143,000,000
	Climate Resiliency Implementation Planning	5,000,000	5,000,000	5,000,000	10,000,000	25,000,000
	Support for 2 Million Homes Goal	-	15,000,000	10,000,000	-	25,000,000
	Technical Services	5,000,000	10,000,000	10,000,000	15,000,000	40,000,000
	LMI Efficient Appliances Program	-	10,000,000	-	-	10,000,000
	Innovative Finance & Risk Management	-	3,000,000	3,000,000	-	6,000,000
	Innovative GHG Abatement Strategies	Electric Vehicle/Charge NY	89,900,000	74,000,000	57,000,000	57,000,000
Clean Energy Business Development		5,400,000	4,100,000	6,000,000	-	15,500,000
Natural Carbon Solutions		2,000,000	2,000,000	3,000,000	-	7,000,000
Equity and Climate Transformation Research		900,000	1,000,000	1,000,000	-	2,900,000
Scoping Plan Implementation Research		7,200,000	9,500,000	6,000,000	6,000,000	28,700,000
Advanced Fuels		-	8,250,000	8,250,000	8,000,000	24,500,000
Community Clean Energy	Cleaner Greener Communities	(1,058,912)	-	-	-	(1,058,912)
	Clean Energy Communities	3,000,000	2,000,000	13,000,000	10,000,000	28,000,000
	Healthy New Home Design & Construction Challenge	3,000,000	3,000,000	3,000,000	-	9,000,000
	Clean Energy Workforce Development	9,000,000	25,000,000	30,000,000	11,000,000	75,000,000
	Clean Energy Hubs	3,000,000	6,500,000	6,500,000	6,500,000	22,500,000
	Community-Based DAC Engagement	-	-	3,500,000	1,500,000	5,000,000
	Clean Energy Siting and Soft Cost Reduction	-	-	2,000,000	2,000,000	4,000,000
	Climate Action Consumer Awareness & Education	5,000,000	4,500,000	4,500,000	4,500,000	18,500,000
Directed	NYS Environmental Protection Fund	5,000,000	5,000,000	5,000,000	5,000,000	20,000,000
	Electric Generation Facility Cessation Mitigation	1,000,000	8,000,000	14,158,000	-	23,158,000
	Green Jobs-Green NY- Additional Funding	32,211,693	49,500,000	54,500,000	14,764,433	150,976,126
	Grant Program Match Opportunities	29,000,000	30,000,000	21,664,544	15,000,000	95,664,544
	Transfer to(from) Clean Energy Fund	22,000,000	19,773,196	-	-	41,773,196
Administration and Other Non-Program Costs	Program Administration	25,606,370	30,445,000	30,445,000	30,445,000	116,941,370
	Program Evaluation	2,000,000	2,000,000	3,000,000	3,000,000	10,000,000
	RGGI Inc pro-rata costs	825,000	825,000	825,000	825,000	3,300,000
	State Cost Recovery	4,060,319	3,353,901	3,744,402	3,595,586	14,754,208
Total Funding Allocations		436,544,470	508,497,097	465,336,946	294,380,019	1,704,758,532

In my previous comments, I evaluated programs in the Operating Amendment relative to their value for future EGU emission reductions. I reviewed each proposed program and classified each program relative to six categories of potential RGGI source emission reductions. The first three categories covered programs that directly, indirectly or could potentially decrease RGGI-affected source emissions. I also included a category for programs that will add load that could potentially increase RGGI source emissions such as programs to incentivize electrification. The two other categories considered programs that do not affect emissions and administrative costs respectively.

Table 8 presents the results of my interpretation of the potential for RGGI EGU emission reductions for the programs in the proposed amendment for the 2025 Draft Amendment. The five programs without documentation are highlighted in yellow. The orange highlighted programs will be discussed later. The first three categories cover programs that directly, indirectly, or could potentially decrease RGGI-affected source emissions which only for 22% of the investments. Programs that will add load that could potentially increase RGGI source emissions and whose emissions savings are unrelated to the electric

sector total 37% of the investments. Programs that do not affect emissions are funded with 29% of the proceeds and administrative costs total another 8%. Clearly there is no preference for reducing emissions.

Table 8: Potential for RGGI Reductions for Funding Allocations for 2025 Operating Plan Amendments

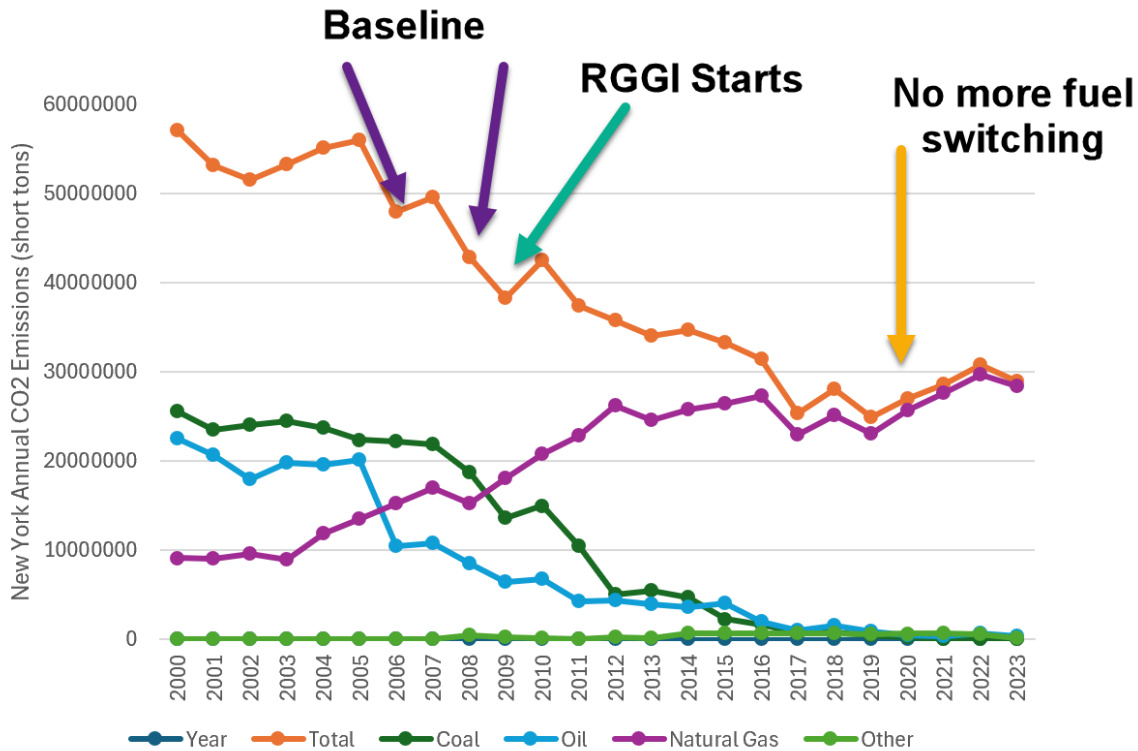
	Total for Amendment					
	Direct RGGI Reductions	Indirect RGGI Reductions	Potential RGGI Reductions	Increase Generation	No Emission Reductions	Administration Costs
NYSun Statewide Customer Incentives	29,000,000					
NYSun Long Island SEEF Incentives	15,000,000					
Residential PV Plus Storage	3,000,000					
Agrivoltaics					22,000,000	
Circular Economy Renewable Energy Feasibility Study					1,000,000	
LIPA Efficiency and RE		80,000,000				
EmPower+		75,875,000		75,875,000		
Comfort Home		3,250,000		3,250,000		
Pilot Projects with Municipal Utilities		1,000,000		1,000,000		
Disadvantaged Communities Schools/Buildings		56,250,000		56,250,000		
Multifamily Low Carbon Capital Planning/ Pathway Projects				30,000,000		
Community Thermal Energy Networks				9,000,000		
Building Retrofit and New Construction Challenges				143,000,000		
Climate Resiliency Implementation Planning					25,000,000	
Support for 2 Million Homes Goal				25,000,000		
Technical Services					40,000,000	
LMI Efficient Appliances Program		10,000,000				
Innovative Finance & Risk Management					6,000,000	
Electric Vehicle/Charge NY				277,900,000		
Clean Energy Business Development					15,500,000	
Natural Carbon Solutions					7,000,000	
Equity and Climate Transformation Research					2,900,000	
Scoping Plan Implementation Research					28,700,000	
Advanced Fuels					24,500,000	
Cleaner Greener Communities					1,058,912	
Clean Energy Communities		14,000,000		14,000,000		
Healthy New Home Design & Construction Challenge					9,000,000	
Clean Energy Workforce Development					75,000,000	
Clean Energy Hubs					22,500,000	
CommunityBased DAC Engagement					5,000,000	
Clean Energy Siting and Soft Cost Reduction					4,000,000	
Climate Action Consumer Awareness & Education					18,500,000	
NYS Environmental Protection Fund					20,000,000	
Electric Generation Facility Cessation Mitigation					23,158,000	
Green JobsGreen NYAdditional Funding					150,976,126	
Grant Program Match Opportunities			95,664,544			
Transfer to(f rom) Clean Energy Fund						
Program Administration						116,941,370
Program Evaluation						10,000,000
RGGI Inc prorata costs						3,300,000
State Cost Recovery						14,754,208
Totals	47,000,000	240,375,000	95,664,544	635,275,000	501,793,038	144,995,578
	3%	14%	6%	37%	29%	8%

RGGI Compliance Summary

Given my decades-long background in the electric sector, it is not surprising that I have compliance concerns. NYSERDA in general and the 2025 Draft Amendment funding priorities do not recognize the implications of the observed emission trends. Figure 2 shows that no further fuel switching emission reductions are available. Affected sources have no remaining options to comply with RGGI mandates other than limiting operations. Future emission

reductions are only possible if zero-emission resources displace the generation of RGGI-affected sources.

Figure 2: New York State Utility Emissions by Fuel Type



In all my comments to NYSERDA on their operating plan amendments I have argued that funding priorities over emphasize Climate Leadership and Community Protection Act (Climate Act) initiatives at the expense of the electric generating unit RGGI emission goals. I take the simple position that RGGI was promulgated as an emission reduction program for the electric generating sector. Advocates for market-based carbon dioxide trading programs overlook the ramifications of the limited compliance options for affected sources. New York sources can only limit operations to reduce emissions at this time. NYSERDA ignores the fact that their investments are necessary to displace generation and emissions at those sources. NYSERDA funding priorities do not acknowledge that the failure of affected sources to comply with the RGGI compliance requirements has reliability ramifications.

I conclude that NYSERDA must reassess its program funding priorities to ensure that sufficient funding is available for programs that displace electric sector generation to zero-emissions sources. If NYSERDA provided a comprehensive explanation of all the emission reduction

strategies in the Scoping Plan along with the expected emission reductions, anticipated costs, and potential sources of funding for their strategies then it would be possible to determine whether NYSERDA has planned for the necessary reductions via other programs. If NYSERDA published documentation of their response to submitted comments on their Operating Plan amendments, they could have explained their strategy for RGGI compliance. The lack of transparency precludes that reassurance.

Revenue Allocation Tradeoffs

Danny Cullenward and David Victor's book [Making Climate Policy Work](#) describe one aspect of this problem that has not been acknowledged by NYSERDA. The authors note that the level of expenditures needed to implement the net-zero transition vastly exceeds the "funds that can be readily appropriated from market mechanisms". That observation and the conclusion that New York is going to have to fund alternative technologies means that electric system emission reduction investments should be a priority for RGGI revenues.

This is my fifth set of comments on the annual operating plan amendment. Previously I was able to say that there has been a comfortable margin between emissions and allowance allocations such that costs have stayed below the RGGI Cost Containment Reserve (CCR) targets. That changed in 2024. In the last auction in 2023 the allowance clearing price was \$14.88. In the March 2024 auction the price went up to \$16.00, triggering the release of the CCR allowances. The June auction clearing price jumped to \$21.03 and went up to \$25.75 in the September auction before falling to \$20.05 in December. That is still well above the 2025 CCR price trigger of \$17.03 so I expect that CCR allowances will be released next March. Clearly the margin between available allowances and emissions is getting smaller. This increases the importance of adequately funding programs that reduce emissions and the need to prioritize those programs that have been proven most effective.

In that context, it is particularly troubling that there is no feasibility analysis available. The sources that are responsible for compliance with RGGI have no remaining options for on-site control so must rely on others to make the investments for zero-carbon emitting resources to displace their operations to achieve emission reductions. If we do not know how the electric sector is expected to achieve zero emissions by 2040 then we do not know how much money is needed and what programs are needed to make the electric sector reductions necessary to meet that goal. A feasibility analysis would provide that information.

Program Priorities

In addition, it is clear that new technology is needed to achieve the goals so it is unclear whether the sector can reach zero emissions reliably and affordably. As part of the proceeding

to implement a large-scale renewable program and the Clean Energy Standard ([Proceeding 15-E-0302](#)), the Public Service Commission held a technical conference on December 11 and 12, 2023 entitled “[Zero Emissions by 2040](#)” that included a session titled “Gap Characterization.” The Gap Characterization session described the gap between the capabilities of existing renewable energy technologies and future system reliability needs. Speakers acknowledged that generation from wind and solar alone could not fill the gap and recognized the need for some new resource to be developed to provide electricity to meet demand when wind and solar production are low. They referred to this new, not-yet-existing, hypothetical technology as the Dispatchable Emissions-Free Resource, or “DEFER.” The unacknowledged problem is that DEFER may be required sooner to facilitate RGGI compliance requirements.

The need for emission reductions, energy savings, and need for new technology should set the priorities for the NYSERRDA RGGI Operating Plan in general and this Amendment in particular. Adequate funding for zero-emission electric generation is a prerequisite for a successful transition. The transition cannot occur unless new technology necessary for the zero-emissions electric grid is developed. A feasibility analysis is needed as soon as possible to determine how much money will be needed for emission reductions consistent with the goals and to determine what is needed for new technology development and deployment. Such an analysis would also determine a realistic schedule.

In the meantime, the experience gained with past investments should be considered when allocating revenues. The observed emission reduction effectiveness for existing programs should be used to prioritize electric sector programs.

Proposed Program Funding

In my previous comments on Operating Plan amendments, I have addressed each of the proposed funding allocations. Given the broken stakeholder process I am not going to waste my time for a similar effort in these comments. I am only going to comment on the two programs highlighted in orange in Table 8: Climate Action Consumer Awareness & Education and Clean Energy Siting and Soft Cost Reduction.

The Climate Action Consumer Awareness & Education program description states:

The proposed funds aim to increase awareness and understanding of the critical need for and benefits of climate action in New York State. This investment will include targeted marketing to impact the purchase decisions and actions that are needed to support the State’s climate goals. The targeted marketing will address specific barriers across critical sectors and encourage adoption of new technologies that will improve quality of life and help decarbonize our buildings and economy.

In my opinion, this is simply propaganda. NYSERDA is trying to guild the pig and con consumers into improving “quality of life”. If their alternatives are so wonderful, then why the need to spend \$18.5 billion on convincing New Yorkers that the alternatives really aren’t less convenient, resilient, and safe while costing more. I think investing in programs that reduce low- and middle-income consumer costs is a better investment. The Clean Energy Siting and Soft Cost Reduction program is no better.

This initiative will provide technical support to local governments and communities in New York with the education and resources they need to support local clean energy development, including solar, wind, energy storage, and other emerging technologies. As local governments are the permitting authority for most clean energy projects, it is essential that they have the tools they need to support the goals of the Climate Act. This initiative will expand the technical support network for communities by funding locally-based support networks, including forums as required in the SITED act, for community members and other stakeholders to learn and exchange information about clean energy. It will also provide funding for technical support contractors with subject-matter expertise to assist NYSERDA staff in developing new tools, resources, and training. Finally, this funding will allow the team to develop new resources for emerging technologies, with specific focus on dispatchable emissions free resources.

One could say that providing \$4 million to local governments for “the tools they need to support the goals of the Climate Act” is a laudable investment but others could say it represents payola to further erode local rights.

I do want to make another plea for a stakeholder response to comments document. Although I am concerned about allocating any resources to programs NYSERDA that do not reduce emissions, I have previously argued on the need for one program. I offer my comments on that program below. If there was a response to comments document, then I would know if anybody has heard my arguments and rejected them or if something is in the works.

DEFER Gap Feasibility Study

During the December 5, 2024 Stakeholder meeting I asked if RGGI proceeds would be used to fund Dispatchable Emissions-Free Resource (DEFER) technical studies. The answer was probably but I do not know if my DEFER recommendation is under consideration.

I believe that the RGGI Operating Plan should confront the biggest Climate Act problem – feasibility. At this time, the State has not presented any clear plan demonstrating that in the early to mid-2030s there will be sufficient reliable electricity generation to meet the demands

anticipated from both current uses, from the expected addition of new large sources of load like chip fabrication plants and data centers, and from the load added as part of electrification decarbonization strategies. Indeed, the State has admitted that, in lieu of a definitive plan, it relies instead on a speculative hope for new technologies not yet invented or deployed at scale to bridge the large difference in electricity supply that will inevitably arise from the conflicting mandates.

The biggest feasibility challenge is the identified “gap” when wind and solar resources are low for long periods. The existence of this “gap,” and the need to fill it to maintain a reliable electrical grid, was acknowledged in the Climate Action Council’s Scoping Plan of December 2022 and has also been recognized by the responsible New York regulators, particularly the Public Service Commission and the New York Independent System Operator. However, no one in the New York State government to date has specified how the gap will be filled by the mid-2030s.

As one example of appropriate feasibility funding, I recommend analyzing the variability in low wind and solar resource availability. New DEFR technology is needed for these periods. The characteristics of the resource gaps must be quantified not only for New York but also for adjoining regional systems presuming that they also transition to an electric system with a similar reliance on wind and solar.

The Independent System Operator of New England (ISO-NE) [Operational Impact of Extreme Weather Events](#) completed an analysis that addresses this need for New England. The study evaluated 1-, 5-, and 21-day extreme cold and hot events using a database covering 1950 to 2021. The results illustrate why this information is necessary. Not surprisingly the system risk or “the aggregated unavailable supply plus the exceptional demand” during an event increased as the lookback period increased. If the resource adequacy planning for New England only looked at the last ten years, then the system risk would be 8,714 MW, but over the whole period of record, the worst system risk was 9,160 MW which represents a resource increase of 5.1%.

As part of the recently completed NYISO [2023-2042 System & Resource Outlook](#), DNV modeled “long-term hourly simulated weather and generation profiles for representative offshore wind (OSW), land-based wind (LBW), and utility- scale solar (UPV) generators”. The analysis covered the period 2000 to 2021 and was limited to the New York Control Area. At the September 27, 2024 New York State Reliability Council (NYSRC) [Extreme Weather Working Group \(EWWG\) meeting](#), Thomas Primrose from PSEG Long Island presented his analysis of data from the DNV work. Among other things, his [evaluation](#) found that all New York solar, onshore wind, and

offshore wind capacity averaged less than 10% for 73 hours starting November 23, 2016 at 1600. I found that if the renewable resources projected in the Integration Analysis, without any fossil-fired resources, were operating at that time that there would have been a cumulative generation deficit of up to 103,465 MWh within the lull. Note that the lull deficiency projection length is dependent upon the location of the solar and wind facilities, so this is an approximation.

It is imperative that the Climate Act transition plan address the characteristics of these gaps for New York planning. The frequency, duration, and intensity of wind and solar availability gaps must be known to properly plan to provide the generation, storage, and DEFER resources necessary to maintain reliable service using weather-dependent intermittent resources. The RGGI Operating Plan Amendments should extend the NYISO analysis to adjoining control areas and over a longer analysis period. Note that at the aforementioned EWWG meeting a [draft comment](#) for the NYSRC Executive Committee recommending this expanded analysis was discussed. At the last Executive Committee meeting the recommendation was discussed and is under active consideration.

Conclusion

My primary concern is that RGGI is an electric sector emissions reduction program. I have shown that the observed electric sector emission trends indicate that the observed reductions occurred because of fuel switching from coal and oil to natural gas and that there are no more fuel switching opportunities. Therefore, programs that materially decrease electric sector emissions directly or indirectly through energy use reductions should be a priority because affected sources have no other options. There are programs in the amendment that do not meet these criteria. It is only appropriate to fund the non-priority programs if sufficient funding has been allocated to make the emission reductions necessary to meet RGGI compliance mandates. Unfortunately, determining those levels is not possible because NYSERDA has not provided adequate feasibility analysis documentation.

I also recommend that the stakeholder engagement process be revised to include response to comment documentation.

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