



New York State Comptroller
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Economic and Policy Insights

New York State's Clean Energy Fund

July 2024

Introduction

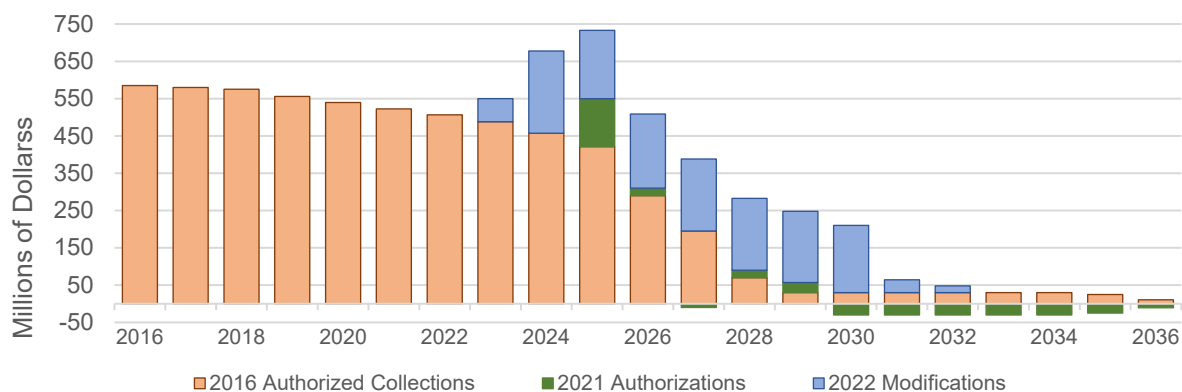
As part of its efforts to achieve its energy goals, New York State established the Clean Energy Fund (CEF) with financing by ratepayers to promote the development and use of clean energy sources. Between 2016 and 2032, the CEF is approved to collect \$7.5 billion. Review of CEF-supported programs indicates some have exceeded the goals set out by the New York State Public Service Commission (PSC), while others appear not to be on track to reach their 2025 targets. A strategic framework adopted by the PSC in 2023—intended to refocus CEF programs on more permanent building upgrades or replacement of fossil fueled building heating systems with electric heat pumps—has the potential to assist in winnowing less successful initiatives and moving the State towards achieving the goals of the Climate Leadership and Community Protection Act (CLCPA).¹

Collections from Ratepayers Fund CEF Programs

The CEF was authorized by the PSC in 2016 and is administered by the New York State Energy Research and Development Authority (NYSERDA) to promote the use and development of clean energy resources.² The PSC adopted an Order authorizing NYSERDA to solicit and support projects for a ten-year period (2016-2025) primarily through surcharges on customer utility bills.³ This support is comprised of \$3.9 billion of ratepayer collections, \$250 million from Regional Greenhouse Gas Initiative allowance auctions, and close to \$1.2 billion in unspent ratepayer collections that were previously authorized for legacy NYSERDA programs. The PSC also authorized additional collections through 2036 to support CEF activities that extend beyond 2025, for a total of \$6 billion.⁴

As shown in Figure 1, the CEF's funding level was amended in 2021 to support program expansions required by CLCPA and again in 2022 to support expansion of the NY-Sun program and reallocate funding for New York Green Bank capitalization. These increases pushed the total level of approved CEF collections to nearly \$7.5 billion. While the amendments increased overall collections, they also had the effect of accelerating all authorized funding to 2032 or prior, so that no funding is currently authorized in 2033 or later.

Figure 1
CEF Ratepayer Collection Schedule by Authorized Amendments and Modifications, 2016-2036



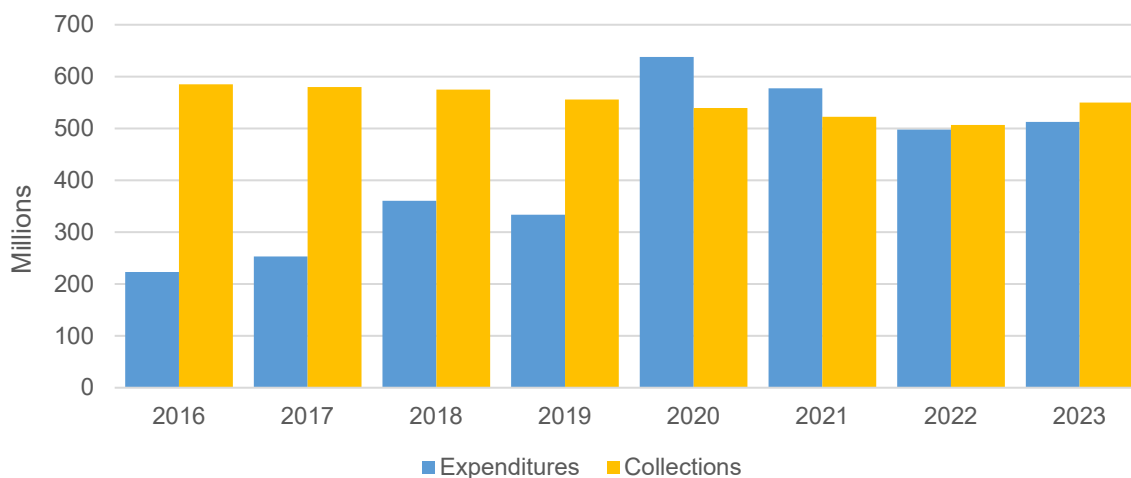
Source: New York State Public Service Commission

CEF funding was initially authorized to provide the following amounts to specific programs:⁵

- \$2.4 billion for the **Market Development Program** to overcome clean energy market barriers, of which \$234.5 million was to be allocated by NYSERDA for programs that provide services to low- and medium-income households;
- \$960.6 million for **NY-SUN** for customer-sited solar;
- \$781.5 million for the **New York Green Bank** for financing of clean energy projects;
- \$631.7 million for **Innovation and Research** needed to bring clean energy products to market; and
- \$404.6 million is allocated for administration and evaluation costs.

Through 2023, NYSERDA spending on CEF programs has totaled \$3.4 billion, lagging collections by approximately \$1 billion (see Figure 2).⁶

Figure 2
NYSERDA Collections and Spending, Clean Energy Fund Programs, 2016 - 2023



Source: New York State Public Service Commission

CEF Goals and Performance to Date

The PSC set goals for CEF investments, including:

- Reducing greenhouse gas emissions by 133 million tons;
- Achieving \$39 billion in customer bill savings;
- Reducing electric consumption by 10.6 terawatt⁷ hours and fuel consumption by 13.4 trillion British thermal units (Btu) through efficiency;
- Generating 88 terawatt hours of clean energy; and
- Attracting \$29 billion in private investment.⁸

In 2021 CEF goals were amended to decrease electric efficiency targets, while increasing targets for reducing fuel consumption. In addition, targets were added for 2030 and to reduce energy consumption:

- Electric – by 6.7 terawatt hours by 2025, 10 terawatt hours by 2030 and 130 terawatt hours over the lifetime of the installed measures; and
- Fuel – by 25 trillion Btu for natural gas and 15 trillion Btu for other fuels by 2025, 38 trillion Btu for natural gas and 17 trillion Btu for other fuels by 2030, and 710 trillion Btu for combined natural gas and other fuels over the lifetime of the installed measures.

Furthermore, the goal for private investment was reduced to \$20 billion to reflect the reduction in costs of renewable energy.⁹ The goals for 2030 are expected to materialize from investments in projects committed to through 2025.¹⁰

NYSERDA releases quarterly performance reports,¹¹ an annual Investment Plan and Performance Report, and an online dashboard to report spending and progress toward program goals. In December 2022 the Department of Public Service (DPS) issued a report reviewing CEF energy efficiency and building electrification programs administered by NYSERDA and reported that CEF programs had generally underspent budgets and underachieved performance targets.¹²

These concerns are also reflected in NYSERDA's quarterly report on CEF progress through December 2023, which shows a total of 23.9 trillion Btu in annual energy savings had been acquired (45 percent of the 2025 goal). Another 17.5 trillion Btu are reported as committed; if these projects are completed, the total energy savings achieved will equal 78 percent of the 2025 goal.

Additional performance levels are summarized in Figure 3, and show, through December 2023, NYSERDA has made the most progress on reaching goals for distributed solar goal capacity (89.1 percent of 2025 goal) and leveraged funds (79 percent of 2025 goal).¹³

Figure 3
NYSERDA Progress Toward Meeting CEF Goals through 2023

	Total Energy Savings Acquired (in trillion of Btu)	2025 Goal (in trillion Btu)	Share of 2025 Goal	Additional Committed Projects (in trillion of Btu)	Total Acquired and Committed Projects (in trillion of Btu)	Share of 2025 Goal
Total Efficiency	23.9	53	45%	17.5	41.4	78%
Natural Gas Efficiency	11.6	25	46%	12.6	24.2	97%
Other Fuel Efficiency	12.6	15	84%	1.1	13.7	91%
	Total Annual Savings (in terawatt hours)	2025 Goal (in terawatt hours)	Share of 2025 Goal	Additional Committed Projects (in terawatt hours)	Total Acquired and Committed Projects (in terawatt hours)	Share of 2025 Goal
Electric Efficiency	2.2	6.7	33%	1.2	3.4	51%
	Acquired (in gigawatts)	2025 Goal (in gigawatts)	Share of 2025 Goal	Committed (in gigawatts)	Total Acquired and Committed (in gigawatts)	Share of 2030 Goal
Distributed Solar Capacity	5.346	6	89.1%	3.5	8.848	88.5%
	Achieved (in billions of dollars)	2025 Goal (in billions of dollars)	Share of 2025 Goal	Committed (in billions of dollars)	Total Acquired and Committed (in billions of dollars)	Share of 2025 Goal
Leveraged Funds	\$15.7	\$20	79%	\$7.8	\$23.5	117.5%

Source: NYSERDA

Spending and Performance of Specific CEF Programs

Market Development Program (MDP)

MDP was intended to sponsor programs that would help overcome clean energy market barriers, including the cost to consumers. In a 2023 report, NYSERDA lists 11 focus areas and 32 active initiatives under the MDP,¹⁴ including funded research in support of State policy initiatives such as the Offshore Wind Master Plan, as well as electric vehicle rebates and Clean Energy Communities programs.

NYSERDA reports that the majority of direct energy efficiency savings have been achieved through the MDP. Specifically, of the acquired energy efficiency savings through 2023, 20.1 trillion Btu, or 84.1 percent of total energy savings acquired by the CEF have been accomplished through this program. The prominence of this program in producing energy efficiency benefits makes it crucial for accomplishing the State's clean energy goals, such that delays in achieving MDP goals may threaten State efforts to achieve the CLCPA goals.¹⁵

Through December 2023, NYSERDA reports that the MDP had expended \$1.2 billion or approximately 50 percent of its authorized budget and an additional 25 percent had been

encumbered making it appear as if the program will not achieve its goals by its 2025 completion date.¹⁶

In 2024, NYSERDA and investor-owned utilities filed a joint *Statewide Low- and Moderate-Income Portfolio Annual Report*.¹⁷ This report shows NYSERDA CEF expenditures against planned expenditures on low- and moderate-income programs, for which specific funds have been set aside by NYSERDA under the PSC Order. The report shows that in 2023 NYSERDA fully, or over spent its budget for only two programs, those addressing existing 1-4 family homes (by 3.4 percent) and affordable new construction (by 188.8 percent), while underspending on programs addressing existing affordable multifamily buildings (by 23.1 percent), customer awareness, outreach and engagement (by 58.3 percent), pilots and demonstrations (by 56.7 percent), low and middle income solar (by 5.5 percent), electrification (by 60.6 percent) and healthy homes (by 83.4 percent).

While this performance shows a strong emphasis on efficient affordable new construction, other programs that will be important for achieving the State's CLCPA goals including electrification, customer engagement and affordable multifamily have lagged.

The *Low- and Moderate-Income Portfolio Annual Report* also shows that NYSERDA overperformed its electric efficiency goals for this portfolio, achieving 2.2 gigawatt hours in savings over its 9.5 gigawatt hour goal, but significantly underperformed in its natural gas savings and other fuel savings goals by 21.7 percent and 67.3 percent, respectively.

MDP is the broadest and most diffuse of CEF programs, and the sheer number of initiatives supported by the MDP may contribute to its mixed performance. DPS staff report the number of programs make it hard for potential users to identify those that meet their needs or understand how programs may interact.¹⁸

Innovation and Research

Through 2023, NYSERDA reports that the Innovation and Research Program has expended \$256.4 million, or approximately 41 percent of its authorized budget.¹⁹

Under this program, NYSERDA has created business incubators, entrepreneur in residence programs and accelerators to assist in the development of new clean energy businesses. It has also undertaken projects to assist in the commercialization of new products through support for research and verification activities.

NYSERDA attributes \$3.4 billion in private capital investments, the creation or retention of approximately 6,000 jobs, the development of 299 commercialized products and 54 verified patents to the activities of this program.²⁰

NY-Sun

NY-Sun has expanded several times since its initiation in 2012 as shown in Figure 4. Through December 2023, 5.3 gigawatts of solar projects had been completed and 3.5 gigawatts were in the pipeline for a total of 8.8 gigawatts of projects.²¹ By 2022, in part because of the new goals of the CLCPA and in part due to the success of the program, the goal was extended to 10 gigawatts by 2030, and funding had been increased to nearly \$3.3 billion.

Figure 4
Timeline of NY-Sun Amendments

Year	Updated Goal	Total Funding in Millions
2012	269 megawatts by 2015	\$216
2014	3 gigawatts by 2023	\$960.6
2016	3 gigawatts by 2023	\$960.6
2018	3 gigawatts by 2023	\$1,176.6
2019	3 gigawatts by 2023	\$1,220.0
2020	6 gigawatts by 2025	\$1,793.0
2022	10 gigawatts by 2030	\$3,266.8

Notes: Prior to 2016 NY-SUN was financed with funding collected through the Renewable Portfolio Standard. Since 2016, the program has been funded through the CEF.

Source: New York State Public Service Commission

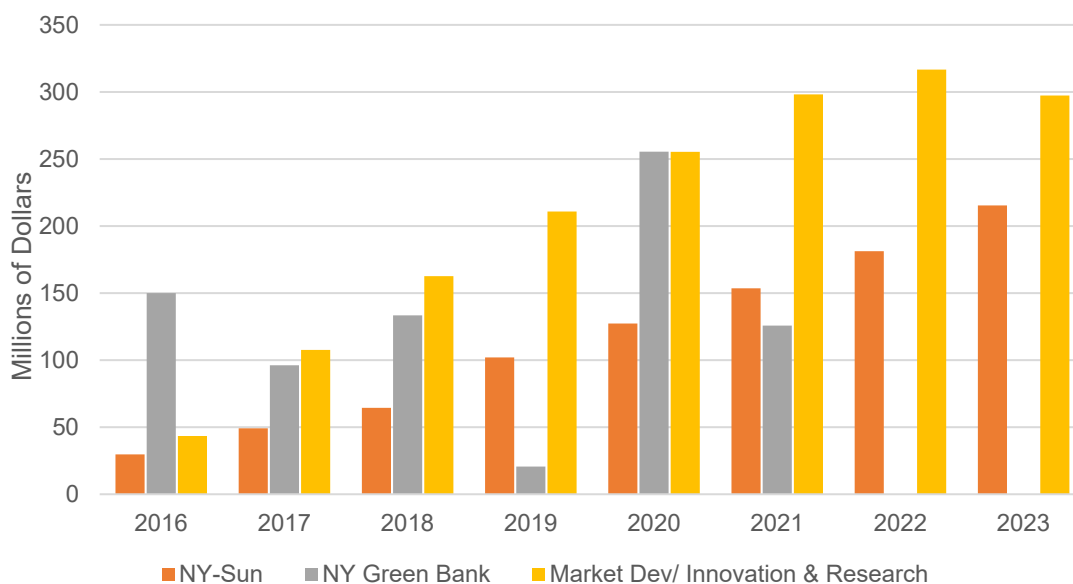
Of the 4 gigawatts in additional capacity authorized in 2022, NYSERDA estimates that only 3.4 gigawatts will require subsidy and that approximately 600 megawatts of capacity will be achieved without subsidy. The PSC directed that 40 percent of this additional capacity is to be targeted to low- and middle-income customers.²² Through 2023, \$1.1 billion of total program funding had been spent.²³ NYSERDA reporting shows that the State has acquired 89.1 percent of its distributed solar goal for 2025, with the percentage rising to nearly 150 percent of the goal if committed projects are counted.²⁴

New York Green Bank (NYGB)

The 2016 CEF Authorization Order provided for a \$1 billion capitalization goal for NYGB.²⁵ In a report filed by NYSERDA with the PSC, the mandate of NYGB is described as: “To accelerate deployment of clean energy by removing barriers in financing markets. It will not compete with private sector entities but will instead partner with them, nor will its principal role be to provide subsidies. NYGB will focus its activities on clean energy projects that are economically viable but not currently financeable.”²⁶ This report said that a lack of experience with financing clean energy projects and an imperfect understanding of the risk profile and track record of clean energy projects served as barriers to a fully functional market for clean energy projects financing.²⁷

While the initial administrative costs of NYGB were covered by a portion of the originally authorized ratepayer funds, it was designed to operate as a commercial institution, lending at market rates and generating revenues that could be recycled into new loans and cover operating cost. NYGB revenues covered operating costs by the second quarter of 2017.²⁸ Over its history, NYGB has committed over \$2 billion in clean energy finance, with an annual investment target of \$225 million, attracting private capital investment of \$5.5 billion in clean energy projects in New York.²⁹

**Figure 5
NYSERDA CEF Spending by Year and Program, 2016-2023**



Note: NYSERDA reports spending for the Market Development Program and the Innovation and Research Program together in its Cash Flow reports in the Public Service Commission’s Clean Energy Fund Proceeding.

Source: New York State Public Service Commission

Discussion and Conclusion

The CEF was established as a 10-year initiative designed to help achieve State clean energy goals, to promote the development of private markets for renewable energy and energy efficiency, and to lower the financial burden of funding clean energy programs on the State’s utility customers.

At its 8-year mark, concerns identified with the CEF include the fact that while the program is moving toward the end of its authorization with slightly less than half of the funds disbursed and acquired electric efficiency savings and (to a lesser extent) natural gas efficiency savings have lagged program goals.³⁰ In addition, the 2023 report on low- and middle-income programs shows that NYSERDA appears to be underspending approved budgets for programs aimed at customer outreach, electrification and multifamily buildings while also underperforming goals for natural gas and other fuel savings.

Review of regular performance reports produced by NYSERDA shows that some CEF programs—NY-Sun, NY Green Bank and Innovation and Research Programs—have made progress toward assigned goals. NYSERDA’s CEF Annual Performance Report for 2023 shows that through year-end these programs had reduced electric consumption by 27.8 gigawatt hours, fuel consumption by 13.7 billion and installed 5.3 gigawatts of distributed solar capacity.³¹

In contrast, some of the MDP performance measures have lagged, including electric and natural gas savings as discussed above. While the MDP supports a large pool of market interventions, the number of programs it supports may be contributing to its underperformance by making it difficult for potential users to identify those that meet their needs. Stepping up performance of

programs to achieve electric efficiency and electrification of buildings will be crucial if the State is to achieve its goals under the CLCPA. In a 2021 CEF Order, the PSC noted that to achieve targeted reductions in emissions from buildings, the State will have to retrofit 200,000 buildings a year, ten times the current rate of about 20,000 per year.³²

To focus programs on more permanent and impactful measures, the PSC has adopted a framework that identifies as “strategic” those programs that make permanent upgrades to building infrastructure that are unlikely to happen absent program incentives and that either reduce overall fossil fuel use or eliminate onsite fossil fuel combustion. Programs promoting measures such as replacing fossil fueled heating systems with electric heat pumps, adding insulation, or sealing leaks in buildings are examples of these programs. Through the review process, the PSC and NYSERDA should use the new strategic framework to winnow the Market Development program initiatives to those that will best advance the clean energy market and focus resources on those initiatives.

Endnotes

- ¹ New York State Public Service Commission (PSC), Order Directing Energy Efficiency and Building Electrification Proposals, Case 14-M-0994 Proceeding on Motion of the Commission to Consider a Clean Energy Fund, July 20, 2023. The CLCPA was adopted in 2019 and establishes a set of goals and programs aimed at decarbonizing the New York State economy on a schedule widely accepted by [climate scientists](#) as necessary to avoid the worst impacts of climate change.
- ² The CEF is one of several programs authorized for this purpose; others include the Clean Energy Standard and New Energy NY.
- ³ Ibid. The Order initially authorized \$5.3 billion in spending over this time frame.
- ⁴ Ibid, Pg. 89. This authorization also supported legacy costs from the Renewable Portfolio Standard.
- ⁵ PSC, Order Authorizing the Clean Energy Fund Framework, Case 14-M-0094 Proceeding on Motion of the Commission to Consider a Clean Energy Fund, January 21, 2016.
- ⁶ Collection and disbursement numbers are drawn from the NYSERDA CEF Cash Flow 12.31.2023 FINAL document filed by NYSERDA in New York State Public Service Commission Case 14-M-0094 on March 1, 2024. Disbursement numbers vary slightly in this document from those reported in NYSERDA, CEF Annual Performance Report: Final Report through December 31, 2023, April 2024.
- ⁷ One terawatt is equal to one trillion watts.
- ⁸ PSC, Order Authorizing the Clean Energy Fund Framework, Case 14-M-0094 Proceeding on Motion of the Commission to Consider a Clean Energy Fund, January 21, 2016.
- ⁹ PSC, Order Approving Clean Energy Fund Modifications, Case 14-M-0094, September 9, 2021.
- ¹⁰ Ibid. Pg. 64.
- ¹¹ Ratepayer collections are held in separate accounts by utilities until the funding is drawn down by NYSERDA on a quarterly basis based on its actual quarterly expenditures on authorized programs. NYSERDA is also directed to coordinate its program offerings with utilities to prevent duplication of efforts.
- ¹² New York State Department of Public Service (DPS), Department of Public Service Staff Energy Efficiency and Building Electrification Report, Case 14-M-0094 Proceeding on Motion of the Commission to Consider a Clean Energy Fund, December 19, 2022
- ¹³ NYSERDA, *CEF Annual Performance Report: Final Report through December 31, 2023*, April 2024
- ¹⁴ NYSERDA, Clean Energy Fund Compiled Investment Plans, Filing in New York State Public Service Commission Case 14-M-0094, August 1, 2023.
- ¹⁵ Efficiency savings in combustible fuels reduced greenhouse gas emissions directly, while electric efficiency reduces overall demand on the State's electric grid making it easier to achieve renewable electricity goals.
- ¹⁶ NYSERDA, CEF Annual Performance Report: Final Report through December 31, 2023, April 2024
- ¹⁷ PSC, Statewide Low- to Moderate-Income Portfolio 2023 Annual Report, April 1, 2024.
- ¹⁸ DPS, Department of Public Service Staff Energy Efficiency and Building Electrification Report, December 19, 2022, op. cit. Page 17.
- ¹⁹ NYSERDA, CEF Annual Performance Report: Final Report through December 31, 2023, April 2024
- ²⁰ NYSERDA Clean Energy Fund, PSC Commissioner Briefing, Filing in New York State Public Service Commission Case 14-M-0094, April 28, 2023.
- ²¹ NYSERDA, CEF Annual Performance Report: Final Report through December 31, 2023, April 2024. NYSERDA reports that this figure includes projects sourced from utility interconnection inventories that did not receive NY-Sun incentives. NYSERDA reports that approximately 4.1 gigawatts of installed behind the meter solar installations have received NY-Sun incentives.
- ²² PSC, Order Expanding NY-Sun Program, Case 21-E-0629, April 14, 2022.
- ²³ NYSERDA, CEF Annual Performance Report: Final Report through December 31, 2023, April 2024.
- ²⁴ NYSERDA, December 31, 2023, op. cit. page 2.

- ²⁵ In a 2013 Order, the PSC authorized NYSERDA to create the NYGB with \$165.6 million in uncommitted ratepayer funds previously collected under the Energy Efficiency Portfolio Standard, the Renewable Portfolio Standard and the System Benefits Charge. NYSERDA also proposed to allocate \$44.7 million in Regional Greenhouse Gas Initiative revenues to the NYGB. The majority of the remainder of the NYGB \$1 billion capitalization goal was provided in the CEF authorization Order. See: PSC, Order Establishing New York Green Bank and Providing Initial Capitalization, Case 13-M-0412, December 2013; and PSC, January 21, 2016, op. cit.
- ²⁶ Booz & Company, New York State Green Bank, Business Plan Development, Final Report, September, 2013.
- ²⁷ Ibid.
- ²⁸ New York State Energy Research and Development Authority, 2020 Clean Energy Fund, Portfolio summary, December 2020.
- ²⁹ NY Green Bank, *See Our Impact*, Portfolio. Accessed on September 12, 2023, at <https://greenbank.ny.gov/Our-Impact/Portfolio>.
- ³⁰ While the CEF low- and medium-income program did not have assigned budgets or performance targets, \$153 million was expended on these programs for the period between 2016 and 2019. See for example, NYSERDA, Annual Investment Plan and Performance Report through December 31, 2023: Final Report, March 2021, Pgs. A-78 through a-82.
- ³¹ NYSERDA, CEF Annual Performance Report: Final Report through December 31, 2023, April 2024
- ³² PSC, Order Approving Clean Energy Fund Modifications, Case 14-M-0094, September 9, 2021.

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