

# Clean Energy Fund Quarterly Performance Report through March 31, 2020

Final Report | June 2020

## **NYSERDA's Promise to New Yorkers:**

NYSERDA provides resources, expertise, and objective information so New Yorkers can make confident, informed energy decisions.

### **Mission Statement:**

Advance innovative energy solutions in ways that improve New York's economy and environment.

### **Vision Statement:**

Serve as a catalyst – advancing energy innovation, technology, and investment; transforming New York's economy; and empowering people to choose clean and efficient energy as part of their everyday lives.



# **Clean Energy Fund Quarterly Performance Report through March 31, 2020**

*Final Report*

Prepared by:

**New York State Energy Research and Development Authority**

Albany, NY

# About This Report

---

The Clean Energy Fund (CEF) Order was issued on January 21, 2016.<sup>1</sup> The CEF is comprised of four distinct portfolios (CEF Portfolio):

- Market Development (MD)
- Innovation and Research (I&R)
- NY-Sun
- NY Green Bank

The CEF Order required quarterly reporting for the MD and I&R portfolios to explain the following:

- Progress against initiative-specific milestones
- CEF goal metric schedules outlined in the Investment Plan chapters
- Tracking of expenditures and commitments against their prospective budgets

Starting with the fourth quarter 2018 reporting, New York State Energy Research and Development Authority (NYSERDA) files a scorecard with the Public Service Commission containing metrics for each investment plan. This data fulfills part of the ordered reporting requirements and is featured in the public NY Clean Energy Dashboard, along with metrics data for utility programs. Over time, NYSERDA anticipates that this report will evolve to focus on higher level summary and qualitative progress information not contained in the scorecard or the NY Clean Energy Dashboard.

Reporting performance for NY-Sun and NY Green Bank is filed separately from this report with the exception of Figure 1, which includes collective targets and progress against those targets for the CEF Portfolio combined. All other performance data in this report reflects MD and I&R portfolios only.

The report represents quarterly and cumulative activity through March 31, 2020 and achievements of all initiatives approved prior to and during the reporting period. This includes transition programs in the Resource Acquisition Transition chapter as well as new initiatives in the MD and I&R chapters.<sup>2</sup>

The report reflects planned and achieved direct benefits from participation in NYSERDA's programs through March 31, 2020. Many CEF initiatives also anticipate accruing indirect, long-term market effects from follow-on market activity. These indirect impacts are based on a theory of change developed for each initiative, and NYSERDA will use best-practice market evaluation approaches to quantify the indirect impacts over time. Indirect benefits will be reflected in progress reporting as these benefits begin to be realized and evaluated.

# Table of Contents

---

<b>NYSERDA Record of Revision .....</b>	<b>i</b>
<b>About This Report.....</b>	<b>iii</b>
<b>List of Tables.....</b>	<b>iv</b>
<b>1 Overview.....</b>	<b>1</b>
<b>2 Resource Acquisition Transition Initiative Specific Progress .....</b>	<b>12</b>
<b>3 Market Development Initiative Specific Results .....</b>	<b>13</b>
<b>4 Innovation and Research Initiative Specific Results .....</b>	<b>16</b>
<b>Appendix A. Near-Term Milestones .....</b>	<b>A-1</b>
<b>Endnotes .....</b>	<b>EN-1</b>

## List of Tables

---

Table 1. Status of CEF Top 15 Initiatives for Carbon Impact   Performers.....	7
Table 2. Status of CEF Top 15 Initiatives for Carbon Impact   Monitoring Performance .....	9
Table 3. Status of CEF Top 15 Initiatives for Carbon Impact   Too Early to Evaluate .....	10
Table 4. Status of CEF Top 15 Initiatives for Carbon Impact   Inactive/Closed .....	10
Table 5. Market Development and Innovation and Research Portfolio-Level Budgets and Spending .....	11
Table 6. Resource Acquisition Transition Initiative-Level Budgets and Spending .....	12
Table 7. Market Development Initiative Budgets and Spending.....	13
Table 8. Innovation and Research Initiative-Level Budgets and Spending .....	16
Table 9. Market Development and Innovation and Research Portfolio .....	17
Table 10. Market Development and Innovation and Research Portfolio .....	18

# 1 Overview

---

The Clean Energy Fund is designed to accelerate the use of clean energy and energy innovation while simultaneously delivering on New York State's commitment to reduce ratepayer collections and drive economic development.

The CEF supports Governor Andrew M. Cuomo's Reforming the Energy Vision (REV) strategy to make New York's energy system more affordable and resilient as well as advance the State's clean energy and climate goals. Energy efficiency is a cornerstone of New York State's strategies to promote clean energy solutions for consumers while addressing climate change. Most recently, the New Efficiency New York recommendations, as advanced in the white paper issued by the Department of Public Service (DPS) and New York State Energy Research and Development Authority (NYSERDA) on April 26, 2018 and as adopted by the Commission in its December 13, 2019 Order, establishes a new 2025 energy efficiency target of 185 trillion British thermal units (Tbtu) of cumulative annual site energy savings.<sup>3</sup> This will accelerate progress toward the State's ambitious clean energy goals, including meeting one-third of the emissions necessary to achieve 40% reduction of greenhouse gas (GHG) emissions by 2030 (40 by 30) from 1990 levels.<sup>4</sup>

The Climate Leadership and Community Protection Act (CLCPA) adopted this energy efficiency target as one of the primary clean energy goals for the State to help reduce greenhouse gas (GHG) emissions from all anthropogenic sources 85% below 1990 levels by the year 2050, as well as the 40 by 30 interim goal. The CLCPA also adopted the following clean energy goals:

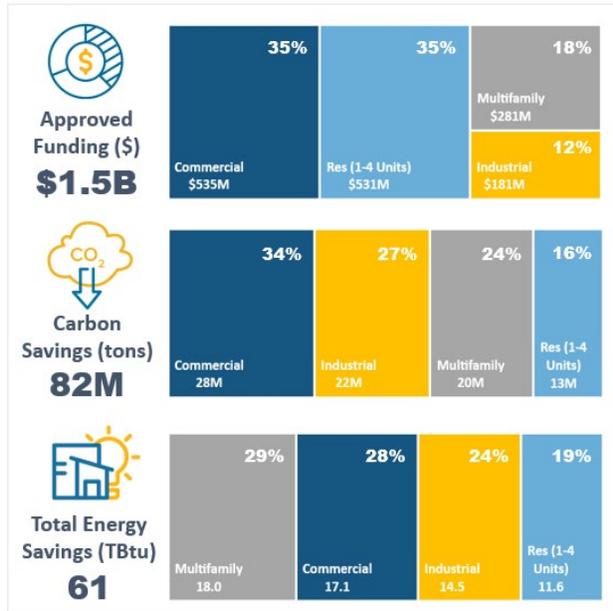
- Six thousand megawatts (MW) of solar by 2025
- Seventy percent renewable electricity by 2030
- Nine thousand MW of offshore wind by 2035
- Zero-emission electricity by 2040

With these goals, New York State is undertaking one of the most aggressive clean energy agendas in the nation. Through the CEF and its other portfolios, NYSERDA works to foster the transformation of markets, pushing them to accurately value clean energy, energy efficiency, and resilience while encouraging competition and innovation that delivers value to consumers.

The CEF portfolios will continue to emphasize investments in energy efficiency over the CEF’s 10-year life span, delivering a minimum of 10.6 million megawatt-hours (MWh) in electric savings and 13.4 million British thermal units (MMBtu) in non-electric fuel savings. NYSERDA’s approved investment plans as of March 31, 2020 comprise more than \$1.5 billion of investment in energy efficiency across the commercial, residential, multifamily, and industrial sectors. These approved investments in energy efficiency are expected to drive nearly 82 million metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) savings over the life of the installed measures.

## Energy Efficiency

A snapshot of the progressively-built CEF portfolio’s planned contributions towards EE by market sector as of Mar. 2020.



Through the Market Development portfolio, NYSERDA is taking action to develop a more robust and value-creating market for energy efficiency, with particular attention to (1) reducing energy efficiency retrofit and new construction costs, (2) accelerating innovative solutions that drive deeper energy retrofits, and (3) advancing targeted financial support to help overcome cost barriers to efficiency investments and ease access for private capital to allow new clean energy interventions to scale. The end goal of CEF MD interventions is to reduce the barriers to energy efficiency deployment and adoption, and ultimately, foster self-sustaining markets for energy efficiency.

The CEF offers solutions that will accomplish the following:

- Drive significant carbon emissions reductions related to energy efficiency targets
- Deliver billions of dollars in customer bill savings over the life of the CEF
- Accelerate growth of the State’s clean energy economy
- Mobilize investment, leveraging \$29 billion over the life of the CEF

Figure 1 presents a more comprehensive picture of progress, with the 10-year budget and 10-year minimum goals reflecting all four CEF portfolios (MD, I&R, NY-Sun, and NY Green Bank). Progress shown against each key performance indicator (KPI) represents results through March 31, 2020 and accounts for overlap across portfolios where it is known to occur.

### Figure 1. CEF Portfolio Expected Investment and Benefits

Toward 10-year minimum goals as of March 31, 2020 (millions).<sup>5</sup>

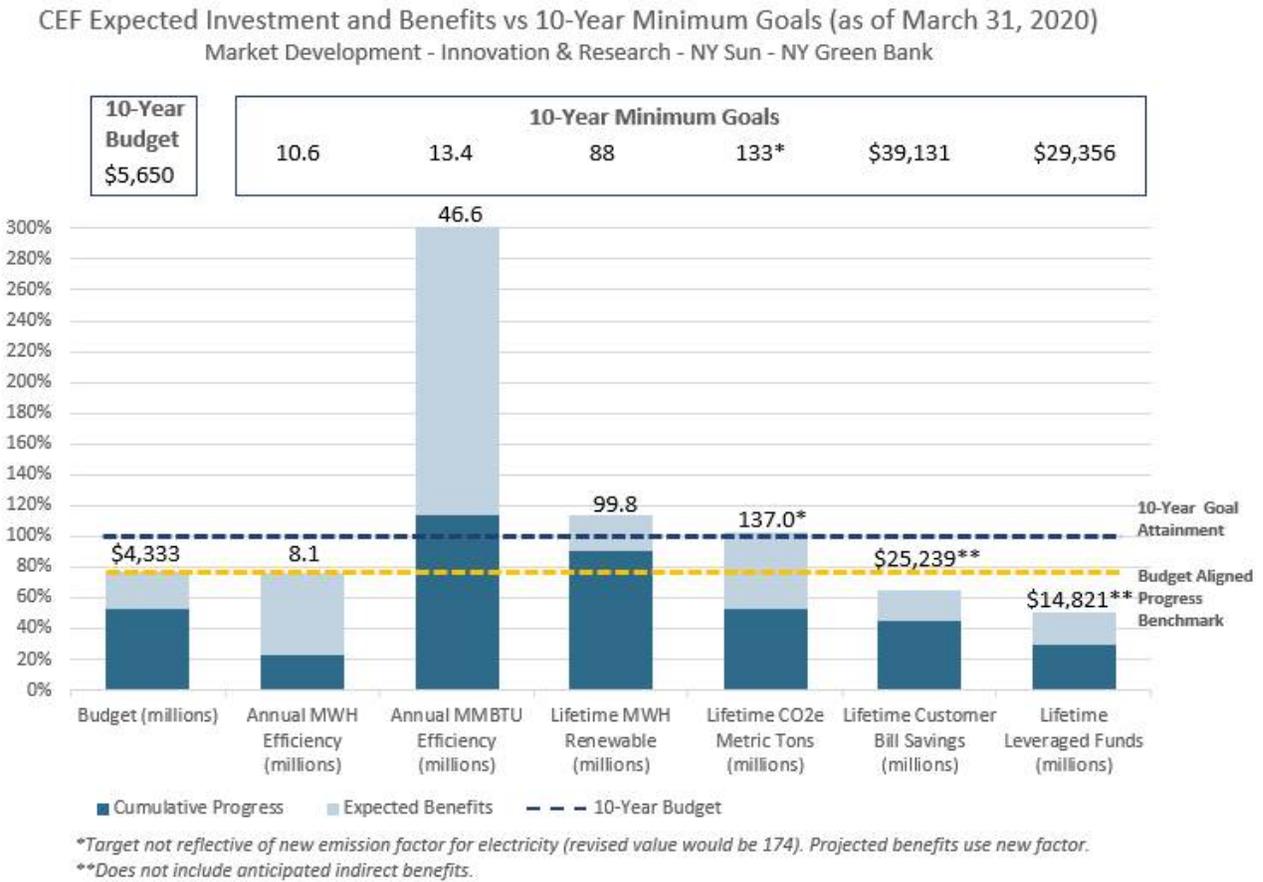


Figure 1 illustrates that deployment of funds is well-aligned with energy and carbon KPI progress at this time. Here, Cumulative Progress (committed budgets and benefits) is combined with Expected Benefits (approved but not yet committed budgets and benefits) to demonstrate total progress toward NYSERDA’s targets.

Progress remains on track with the energy efficiency MWh and MMBtu targeted goals, with MMBtu expected benefits already significantly greater than the minimum projected benefits. Note that these energy efficiency goals were set based on “no backslide” from the prior Energy Efficiency Portfolio Standard programs. Carbon dioxide equivalent (CO<sub>2</sub>e) emission reduction progress is on track to meet the overall goal for the CEF.<sup>6</sup>

While performance appears low at this time for metrics relating to the customer (participant) bill savings<sup>7</sup> and lifetime leveraged funds, these metrics are not yet inclusive of estimated indirect benefits expected to occur (and be measured) later in the 10-year life of the portfolio. NYSERDA has begun baseline and

follow-up market measurements in order to quantify indirect benefits and expects the addition of these currently unaccounted for benefits to raise overall performance up to a level that tracks well against the overall goals.

## **Composition and Management of Market Development and Innovation and Research Portfolios**

Following the 2016 release of the CEF Order, NYSERDA introduced 41 new model market transformation initiatives alongside 14 resource acquisition transition initiatives—a purposeful portfolio mix intended to introduce a greater proportion of market-enabling activities without disrupting existing market momentum accustomed to more traditional NYSERDA and utility approaches. Through March 2020, a total of 68 MD and I&R initiatives have been developed by NYSERDA and filed with the Public Service Commission, of which 51 initiatives were considered active, engaging the marketplace during this period. As of January 1, 2020, each of the original resource acquisition transition initiatives are no longer considered active in the marketplace.

Collectively, NYSERDA’s management of this portfolio is similar to that of a financial advisor managing a retirement portfolio: building out portfolio diversity in a way that can deliver investment goals, while monitoring the performance of every element to keep the portfolio on track for the long term. NYSERDA commonly refers to this approach with the CEF in the spirit of market transformation as the “Test-Measure-Adjust model,” which proactively shifts investments as needed to maintain a balanced portfolio, while targeting areas of greatest strategic opportunity.

For new initiatives in the Market Development portfolio, forecasting market uptake and return on investment can be challenging, so NYSERDA is continually gathering and assessing data on progress and reviewing forecasts for accuracy. In that spirit and aligned with the preparation of the annual Investment Plan Performance Report (IPPR), NYSERDA completes a comprehensive annual review of all CEF portfolio program’s performance against plans. This process includes incorporating the actual progress of the previous year into the operating plan for each program, while refining the forward-looking view based on an understanding of history and the current/anticipated market landscape. In doing so, NYSERDA sets a clear expectation for what programs are likely to achieve as they evolve as well as where the MD and I&R portfolios are likely to finish. Both views are vital to properly growing and guiding the CEF portfolio to achieve CEF Order targets. The annual update of all CEF program forecasts completed in 2020 was done prior to the coronavirus pandemic and the NY on PAUSE Executive Order, and as such, these plans would now be considered aggressive from a near-term planning and performance measurement standpoint.

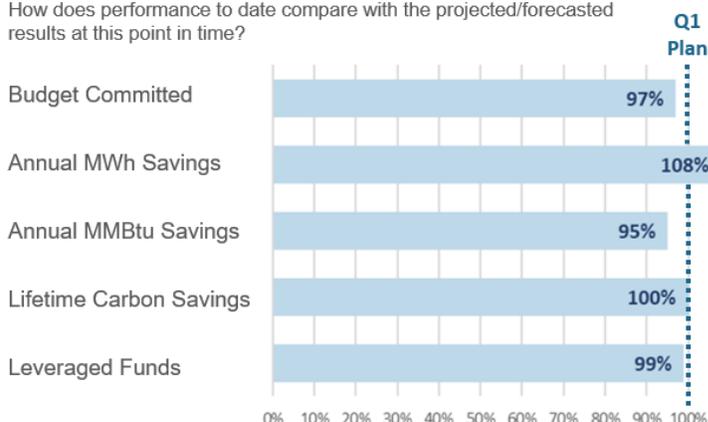
## Performance to Plan

NYSERDA closely monitors MD and I&R portfolio performance, specifically measuring each initiative against its investment plan forecast of budget and benefits over time. As 2020 continues to unfold and the full impact of COVID-19 on New York State’s economy becomes clear, NYSERDA recognizes the likelihood that all plans established for the year will exceed the market’s ability to respond, and that the key performance indicators (KPI) below will likely begin to reflect this situation beginning in Q2 2020. NYSERDA will continuously seek market input to refine our expectations for near-term progress, incorporating what has been learned into adjusted forecasts to better serve stakeholders assessing the progress and to strengthen our ability to manage each individual program effectively. The timing of these forecast adjustments will not occur before a broader assessment of the COVID impact can be completed and the economy has begun to pivot from the pause and fully reopen.

The following figure is a high-level view of NYSERDA’s MD and I&R portfolio performance to plan. NYSERDA’s planned benefits through Q1 2020 are defined as 100% of the 2016–2019 and 25% of 2020 annual planned benefits.

### MD and I&R Portfolio Performance-To-Plan

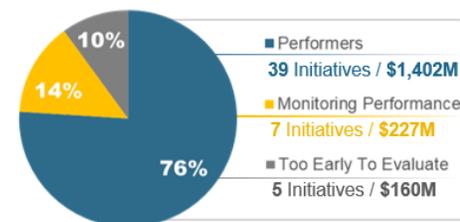
How does performance to date compare with the projected/forecasted results at this point in time?



### Portfolio Initiative Performance

Categorizing the status of all (51) active initiatives (those engaging the market) across the CEF portfolio in relationship to our expected performance & accomplishments to date; the sum of approved budgets by category provide scale to performance.

As the portfolio is progressively built each year, this chart will reflect those changes, particularly as new initiatives begin engaging the market.



**Performers**  
generally doing well in terms of market uptake and benefits delivery.

**Monitoring Performance**  
may still deliver as planned, but need some degree of confirmation of their market uptake and/or benefits quantification, and potentially some adjustment or corrective action.

**Too Early to Evaluate**  
expected to deliver as planned, but still too close to launch to effectively assess performance or impact

Broadly speaking, the portfolio remains in good standing when assessing progress through the first quarter of the year. Specifically, the majority of active initiatives are considered performers with a considerable reduction in the number of initiatives characterized as monitored this quarter. Some of this reduction can be attributed to several programs closing (becoming “inactive” at the end of 2019),

while others are characterized by sustained improvement in both KPIs and more qualitative elements of expected progress such as attaining planned milestones or achieving specific program or market-based outputs/outcomes.

Achieving greater impact per ratepayer dollar involves experimentation with intervention approaches and tolerance for failure, provided it is addressed swiftly and the portfolio is on track to meet long-term outcomes. Accordingly, NYSERDA is using a test-measure-adjust approach to be as responsive to market conditions in real time as possible and redeploy resources from underperforming efforts when appropriate. Overall, the composition of the portfolio in terms of the status categories Performers, Monitoring Performance, and Too Early to Evaluate remains aligned with design and management expectations.

### Spotlight On the Top Carbon Impact Initiatives

In NYSERDA’s MD and I&R portfolio, 15 key initiatives currently account for approximately 84% of the expected lifetime CO<sub>2</sub>e benefits and 37% of the total approved budget. These top contributors also include a very strong focus on energy efficiency, not unlike the majority of CEF programs.

#### Top 15 Performance

Categorizing the status and quantity of the largest carbon savings initiatives within the portfolio in relationship to performance to date against plans.



#### Top 15 Carbon Impact



Although NYSERDA closely manages the performance of all the initiatives in the portfolio, these top 15 initiatives are worthy of special attention due to the weight they carry in terms of the overall success of the CEF in delivering expected benefits. This section of the overview ranks the initiatives from largest to smallest expected CO<sub>2</sub>e contribution within the three status categories previously introduced: Performers (Table 1), Monitoring Performance (Table 2), and Too Early to Evaluate (Table 3). There is one final group (Table 4) that captures programs no longer active in the market.

The composition of performance status across the top 15 programs has improved since Q4 2019, demonstrating that most programs vital to NYSERDA’s ability to deliver expected benefits and meet CEF

targets are making strong progress against their plans. Performance shown in the following tables reflects a mix of progress against both new 2020 plans for CEF Chapters recently filed and 2019-vintage plans that will soon be updated through plan modifications for other initiatives. Programs that are still being measured against older plans for Q1 have been denoted with an asterisk (\*).

**Table 1. Status of CEF Top 15 Initiatives for Carbon Impact | Performers**

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Clean Energy Communities <sup>8</sup>	9%	100%	97%	This initiative continues its track record of strong performance. In total for CEF participants, 509 communities completed 1,352 High-Impact Actions. The Communities Chapter Investment Plan was approved on December 11, 2019. NYSERDA is in the process of developing the Clean Energy Communities Leadership Round which will build on the program’s success to date and better serve communities interested in taking advanced action beyond the original program design.
Energy Management Technology*	7%	74%	234%	Market interest and uptake in RTEM is strong. Adoption rates are highest in commercial office, multifamily market rate housing, and healthcare. Near-term growth sectors include schools and industrial facilities. Program continues to exceed its targets in terms of energy savings, greenhouse gas emissions reduction, and private sector investment. Program has begun to report acquired savings based on performance data from projects that have been operational for over a year.
Building Operations and Maintenance Partnerships (formerly Workforce Development Industry Partnerships)	7%	97%	105%	The solicitation was streamlined significantly in Q1 2020 and revised to better emphasize electrification training strategies. The solicitation is now posted on NYSERDA’s website with applications accepted directly to NYSERDA. Several new proposals are anticipated by Q2.
Technical Services	6%	108%	109%	This multisector initiative, historically a combination of commercial, industrial, and agriculture efforts, has now expanded to include multifamily projects in 2020. The program continues to perform well and is now providing technical assistance on electrification projects in support of the NY Clean Heat Market Development Plan.
Market Challenges (formerly Commercial and Industrial Carbon Challenge)	6%	76%	87%	The Commercial and Industrial Carbon Challenge (CICC) is scheduled to launch in Q2 2020 through the consolidated funding application aiming to attract beneficial electrification and carbon neutral energy projects. A targeted Westchester Commercial and Industrial Carbon Challenge to address natural gas constrained areas was paused in early Q1 2020. The newly approved Empire Building Challenge is slated for launch Q3 2020. <i>It is important to note that all programs set annual goals for benefits and those annual goals are measured quarterly by simply multiplying by the percentage of the year complete (e.g., Q1 = 25%). CICC is not slated to commit significant funds in 2020 until Q4 and percent to plan values will fall behind the standard “linear” method of measuring progress throughout the year.</i>

**Table 1 (Continued). Status of CEF Top 15 Initiatives for Carbon Impact | Performers**

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Energy Management Practices	5%	95%	104%	NYSERDA continues industrial stakeholder engagement to build pipeline participation with more case studies being developed to showcase success for the marketplace. Development of expanding the strategic energy management offering to the Commercial sector and offering a self-service model will enhance carbon savings.
New Construction Market Rate*	5%	n/a	31%	NYSERDA has gathered feedback from stakeholders throughout 2019 and has begun to incorporate that learning in 2020 with refinements for all New Construction programs, furthering efforts on full building electrification and creating measure packages to achieve electrification. A new plan for New Construction that incorporates 2019 results will be filed in Q2 and reflects adjusted expectations for 2020 and future years. Program uptake through the end of Q1 2020 is generally in line with these revised commitment rates. <i>It is important to note that all programs set annual goals for benefits and reporting performance against those annual goals is assessed on a prorata basis each calendar quarter (e.g., Q1 = 25%). Buildings of Excellence and Net Zero Energy for Economic Development are not expected to commit significant funds in 2020 until Q4 and percent to plan values will fall behind the standard "linear" method of measuring progress throughout the year, but the program remains on track to deliver on the revised 2020 plan when considering other measures of progress in engaging the market.</i>
Electric Vehicles Rebate*	3%	82%	85%	NYSERDA is in the process of updating the plan for this program as part of the annual CEF filing, which incorporates 2019 actual progress and revises forward-looking estimates.  Rebates in Q1 2020 were slightly higher than over the same time period in 2019, despite the NY PAUSE affecting a portion of the period, but overall numbers still trail earlier projections because of lower EV sales (both in NY and nationwide) in 2019.
REV Campus Challenge	2%	140%	97%	The initiative continues to see good market uptake, exceeding its membership (participation) goals to date. Clean energy benefits from all member activities continues to be strong. The third round of the Energy to Lead competition closed in Q1; awards are forthcoming.
Heat Pumps Phase 1 (2017) [formerly Heat Pumps and Solar Thermal]	2%	100%	94%	The initiatives show strong interest in participating in the GSHP Rebate program and in the Clean Heating and Cooling Community Campaigns. A recent solicitation for a new round of communities will continue to grow the HeatSmart activity in NYS. Large commercial and multifamily GSHP installations receiving rebates through the GSHP program yield larger savings per project. High savings committed through the Geothermal Clean Energy Challenge are expected but due to long project horizons of these large campus projects, have yet to be installed and realized.

**Table 2. Status of CEF Top 15 Initiatives for Carbon Impact | Monitoring Performance**

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Code to Zero*	2%	0%	0%	The program launched a statewide outreach and engagement campaign to encourage the adoption of NYStretch. New York City is the first municipality to adopt the stretch code and that code will take effect May 12; savings will begin to accrue after that time and as other communities adopt and implement NYStretch. Training was relaunched to prepare the market for the new code cycle and has now shifted entirely to virtual trainings due to COVID-19.
LMI Multifamily*	2%	98%	70%	<p>NYSERDA is in the process of updating the plan for this program as part of the annual CEF filing, which incorporates 2019 actual progress and revises forward-looking estimates.</p> <p>NYSERDA has implemented program changes to better meet the needs of the market and better enable electrification and has received positive feedback from the market. As a result, program intake increased significantly compared to last quarter and over 1,300 units were added to the pipeline.</p>

**Table 3. Status of CEF Top 15 Initiatives for Carbon Impact | Too Early to Evaluate**

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Product and Appliance Standards (formerly Underutilized Product Support)	10%	n/a	n/a	As part of the recent filing to support the NY Clean Heat Market Development Plan, the contents of this investment plan have been revised to remove both the Air Source Heat Pumps and Commercial HVAC components. Research and engagement in this area continues, although actual progress on carbon reduction is dependent on statutory changes and promulgation of standards.
RetrofitNY – LMI*	7%	n/a	54%	Construction is progressing at pace for the first pilot and is anticipated to complete in Q3 2020. Several other potential pilots have been delayed for reasons independent from the program, and NYSERDA is anticipating 1–2 additional pilots to apply this year.  On the net zero energy retrofit solutions manufacturing front, NYSERDA has been engaging several envelope manufacturers to help them adapt their products. Per square foot cost of the solutions projected by these manufacturers are decreasing rapidly.  NYSERDA’s Market Development and Innovation teams continue collaboration supporting the development of cost-effective integrated heating, ventilation, air conditioning and domestic hot water systems. A program opportunity notice was issued by the Innovation team and several proposers that submitted strong concept papers have been invited to submit full applications next quarter.

**Table 4. Status of CEF Top 15 Initiatives for Carbon Impact | Inactive/Closed**

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Industrial Transition	13%	99%	96%	The initiative concluded accepting new applications in December 2019. Existing energy efficiency and process improvement projects are providing carbon savings and are progressing towards installation over the next four years. Utilities now offer financial support for similar new energy projects through each of their commercial and industrial custom efficiency programs.

## Market Development and Innovation and Research Portfolio Performance Data Tables—Budget and Benefits

Table 5 provides an accounting of portfolio budget progress to date against the funding approved for implementation. More detailed breakdowns of funding related to Transition, Market Development, and Innovation and Research focus areas can be found in Tables 6, 7, and 8 of the report. A detailed summary concludes this overview with benefit progress through March 31, 2020—both annual (Table 9) and lifetime (Table 10).

**Table 5. Market Development and Innovation and Research Portfolio-Level Budgets and Spending**

See endnote section for more information.<sup>9</sup>

Initiative	Total Budget <sup>a</sup>	Budget Approved as of March 31, 2020 <sup>b</sup>	% of Ordered Budget Funds Approved <sup>c</sup>	Expended Funds <sup>d</sup>	Committed Funds <sup>e</sup>	Total Progress <sup>f</sup>	% of Approved Budget Committed <sup>g</sup>	Budget Approved Remaining Balance <sup>h</sup>
<b>Market Development</b>								
Program Funds	\$2,393,728,000	\$1,850,610,504	77%	\$425,124,859	\$445,163,987	\$870,288,846	47%	\$980,321,658
NYS Cost Recovery Fee								
<b>Innovation &amp; Research</b>								
Program Funds	\$631,672,000	\$380,339,115	60%	\$60,684,218	\$107,357,052	\$168,041,270	44%	\$212,297,845
NYS Cost Recovery Fee								
<b>Administration</b>	\$274,400,000	\$199,569,360	73%	\$96,623,821	\$110,454	\$96,734,275	48%	\$102,835,085
<b>Evaluation</b>	\$130,200,000	\$76,852,829	59%	\$4,939,667	\$6,331,871	\$11,271,537	15%	\$65,581,292
<b>Total</b>	<b>\$3,430,000,000</b>	<b>\$2,507,371,808</b>	<b>73%</b>	<b>\$587,372,565</b>	<b>\$558,963,363</b>	<b>\$1,146,335,928</b>	<b>46%</b>	<b>\$1,361,035,881</b>

<sup>a</sup> During the quarter ending March 31, 2019, the CEF Budgets were restored to the original ordered funding authorization, reversing a prior reduction of \$68.3 million in funding as a result of the RGGI Operating Plan approved by NYSEERDA's board in January 2019.

<sup>b</sup> Funds approved by DPS as of March 31, 2020.

<sup>c</sup> Percentage of the approved budget.

<sup>d</sup> Invoices processed for payment by NYSEERDA.

<sup>e</sup> Remaining funding obligated under a contract, purchase order, or incentive award and planned funding for contracts awarded and under negotiation.

<sup>f</sup> Sum of categories Expended and Committed Funds.

<sup>g</sup> Percentage of the committed budget.

<sup>h</sup> Difference between categories Budget Approved Funds and Committed Funds.

## 2 Resource Acquisition Transition Initiative Specific Progress

**Table 6. Resource Acquisition Transition Initiative-Level Budgets and Spending**

See endnote section for more information.<sup>10</sup>

Initiative	Budget Approved as of March 31, 2020 <sup>a</sup>	Expended Funds <sup>b</sup>	Committed Funds <sup>c</sup>	Total Progress <sup>d</sup>	% of Approved Budget Committed <sup>e</sup>	Budget Approved Remaining Balance <sup>f</sup>
<b>Resource Acquisition Transition Chapter</b>						
Agriculture Transition	\$3,600,000	\$3,585,899	\$5,000	\$3,590,899	100%	\$9,101
Anaerobic Digesters Transition	\$13,916,258	\$1,536,425	\$12,394,207	\$13,930,632	100%	(\$14,374)
Combined Heat & Power Transition	\$59,486,517	\$18,641,329	\$40,349,215	\$58,990,544	99%	\$495,973
Commercial New Construction Transition	\$24,600,762	\$4,615,459	\$18,097,979	\$22,713,438	92%	\$1,887,324
Commercial Transition	\$12,576,271	\$7,422,296	\$4,972,464	\$12,394,760	99%	\$181,511
Industrial Transition	\$66,004,580	\$26,962,654	\$38,243,693	\$65,206,347	99%	\$798,233
Low Rise New Construction Transition - Market Rate	\$4,538,388	\$3,123,030	\$1,350,546	\$4,473,576	99%	\$64,812
Multifamily Market Rate Transition	\$156,214	\$156,214	-	\$156,214	100%	-
Multifamily New Construction Transition - Market Rate	\$2,487,777	\$788,245	\$1,587,096	\$2,375,341	95%	\$112,436
Single Family Market Rate Transition	\$24,079,440	\$22,956,491	\$857,609	\$23,814,100	99%	\$265,340
Small Wind Transition	\$3,587,089	\$2,691,239	\$874,747	\$3,565,986	99%	\$21,103
Solar Thermal Transition	\$293,770	\$287,513	\$4,944	\$292,457	100%	\$1,313
<b>TOTAL</b>	<b>\$215,327,066</b>	<b>\$92,766,794</b>	<b>\$118,737,501</b>	<b>\$211,504,295</b>	<b>98%</b>	<b>\$3,822,771</b>

<sup>a</sup> Funds approved by DPS as of March 31, 2020. Reflects “inactive”

<sup>b</sup> Invoices processed for payment by NYSERDA.

<sup>c</sup> Remaining funding obligated under a contract, purchase order, or incentive award and planned funding for contracts awarded and under negotiation.

<sup>d</sup> Sum of categories Expended and Committed Funds.

<sup>e</sup> Percentage of the committed budget.

<sup>f</sup> Difference between categories Budget Approved Funds and Committed Funds.

### 3 Market Development Initiative Specific Results

**Table 7. Market Development Initiative Budgets and Spending**

See endnote section for more information.<sup>11,12,13</sup>

Initiative	Budget Approved as of March 31, 2020 <sup>a</sup>	Expended Funds <sup>b</sup>	Committed Funds <sup>c</sup>	Total Progress <sup>d</sup>	% of Approved Budget Committed <sup>e</sup>	Budget Approved Remaining Balance <sup>f</sup>
<b>Agriculture Chapter</b>						
2030 GLASE	\$5,000,000	\$1,268,402	\$3,731,598	\$5,000,000	100%	-
Advancing Agricultural Energy Technologies	\$3,760,000	\$75,419	\$2,494,012	\$2,569,431	68%	\$1,190,569
<b>Agriculture Chapter Total</b>	<b>\$8,760,000</b>	<b>\$1,343,821</b>	<b>\$6,225,610</b>	<b>\$7,569,431</b>	<b>86%</b>	<b>\$1,190,569</b>
<b>Clean Transportation Chapter</b>						
Electric Vehicles - Rebate	\$39,500,000	\$24,610,297	\$1,039,451	\$25,649,748	65%	\$13,850,252
<b>Clean Transportation Chapter Total</b>	<b>\$39,500,000</b>	<b>\$24,610,297</b>	<b>\$1,039,451</b>	<b>\$25,649,748</b>	<b>65%</b>	<b>\$13,850,252</b>
<b>Clean Heating and Cooling</b>						
Heat Pumps Phase 1 (2017)	\$65,776,685	\$35,420,603	\$19,229,551	\$54,650,155	83%	\$11,126,530
Heat Pumps Phase 2 (2020)	\$98,200,000	-	\$167,470	\$167,470	0%	\$98,032,530
Renewable Heat NY - Clean and Efficient Biomass Heating	\$13,487,000	\$7,833,245	\$1,486,571	\$9,319,816	69%	\$4,167,184
<b>Clean Heating and Cooling Total</b>	<b>\$177,463,685</b>	<b>\$43,253,848</b>	<b>\$20,883,592</b>	<b>\$64,137,440</b>	<b>36%</b>	<b>\$113,326,245</b>
<b>Codes Chapter</b>						
Code to Zero	\$21,000,000	\$1,233,591	\$5,904,825	\$7,138,416	34%	\$13,861,584
<b>Codes Chapter Total</b>	<b>\$21,000,000</b>	<b>\$1,233,591</b>	<b>\$5,904,825</b>	<b>\$7,138,416</b>	<b>34%</b>	<b>\$13,861,584</b>
<b>Commercial Chapter</b>						
Energy Management Technology	\$66,605,000	\$13,224,731	\$36,182,434	\$49,407,165	74%	\$17,197,835
P-12 Schools	\$21,600,000	\$1,059,408	\$5,071,387	\$6,130,795	28%	\$15,469,205
Real Estate Tenant	\$25,499,999	\$6,026,132	\$3,923,728	\$9,949,860	39%	\$15,550,139
REV Campus Challenge	\$21,650,002	\$2,721,882	\$6,684,999	\$9,406,880	43%	\$12,243,122
<b>Commercial Chapter Total</b>	<b>\$135,355,001</b>	<b>\$23,032,152</b>	<b>\$51,862,548</b>	<b>\$74,894,700</b>	<b>55%</b>	<b>\$60,460,301</b>
<b>Communities Chapter</b>						
Clean Energy Communities	\$81,271,963	\$8,898,834	\$9,411,564	\$18,310,398	23%	\$62,961,565
Community Energy Engagement	\$4,407,818	\$2,508,302	\$2,057,758	\$4,566,059	104%	(\$158,241)
<b>Communities Chapter Total</b>	<b>\$85,679,781</b>	<b>\$11,407,136</b>	<b>\$11,469,322</b>	<b>\$22,876,458</b>	<b>27%</b>	<b>\$62,803,323</b>
<b>Energy Storage Chapter</b>						
Reducing Barriers to Distributed Deployment	\$24,450,000	\$6,093,299	\$5,512,251	\$11,605,550	47%	\$12,844,450
Solar Plus Energy Storage	\$40,000,000	-	\$38,447,799	\$38,447,799	96%	\$1,552,201
<b>Energy Storage Chapter Total</b>	<b>\$64,450,000</b>	<b>\$6,093,299</b>	<b>\$43,960,050</b>	<b>\$50,053,350</b>	<b>78%</b>	<b>\$14,396,650</b>
<b>Industrial Chapter</b>						
Energy Management Practices	\$35,439,778	\$6,034,767	\$5,752,220	\$11,786,987	33%	\$23,652,791
<b>Industrial Chapter Total</b>	<b>\$35,439,778</b>	<b>\$6,034,767</b>	<b>\$5,752,220</b>	<b>\$11,786,987</b>	<b>33%</b>	<b>\$23,652,791</b>

Table 7 continued

Initiative	Budget Approved as of March 31, 2020 <sup>a</sup>	Expended Funds <sup>b</sup>	Committed Funds <sup>c</sup>	Total Progress <sup>d</sup>	% of Approved Budget Committed <sup>e</sup>	Budget Approved Remaining Balance <sup>f</sup>
<b>Large-Scale Renewables Chapter</b>						
Offshore Wind Master Plan	\$5,000,000	\$4,918,415	\$71,615	\$4,990,030	100%	\$9,970
Offshore Wind Pre-Development Activities	\$10,000,000	\$6,955,564	\$3,015,805	\$9,971,369	100%	\$28,631
<b>Large-Scale Renewables Chapter Total</b>	\$15,000,000	\$11,873,979	\$3,087,420	\$14,961,399	100%	\$38,601
<b>Low- to Moderate-Income Chapter</b>						
Healthy Homes Feasibility Study	\$212,147	\$177,126	\$35,021	\$212,147	100%	-
LMI Multifamily	\$53,834,420	\$5,729,764	\$15,144,859	\$20,874,623	39%	\$32,959,797
Low-Income Forum on Energy	\$1,300,000	\$296,904	\$157,483	\$454,387	35%	\$845,613
Low Rise New Construction Transition - LMI	\$8,487,000	\$3,397,933	\$5,065,294	\$8,463,227	100%	\$23,773
Multifamily New Construction Transition - LMI	\$10,879,000	\$1,956,941	\$8,627,227	\$10,584,168	97%	\$294,832
New Construction - LMI	\$24,784,800	\$1,101,485	\$26,236,450	\$27,337,935	110%	(\$2,553,135)
NYS Healthy Homes Value Based Payment Pilot	\$9,813,654	\$877,846	\$2,149,797	\$3,027,643	31%	\$6,786,011
RetrofitNY - LMI	\$30,503,500	\$2,018,321	\$2,227,232	\$4,245,553	14%	\$26,257,947
REVitalize	\$725,000	\$271,976	\$39,028	\$311,004	43%	\$413,996
Single Family - Low Income	\$169,760,983	\$110,210,443	\$4,267,305	\$114,477,748	67%	\$55,283,235
Single Family - Moderate Income	\$59,500,878	\$40,522,826	\$1,802,938	\$42,325,764	71%	\$17,175,114
Solar For All	\$21,245,000	\$1,558,637	\$10,963,126	\$12,521,763	59%	\$8,723,237
<b>Low- to Moderate-Income Chapter Total</b>	\$391,046,382	\$168,120,202	\$76,715,760	\$244,835,962	63%	\$146,210,420
<b>Multifamily Chapter</b>						
Multifamily	\$37,138,016	-	-	-	0%	\$37,138,016
<b>Multifamily Chapter Total</b>	\$37,138,016	-	-	-	0%	\$37,138,016
<b>Multi-Sector Solutions Chapter</b>						
Clean Energy Siting and Soft Cost Reduction	\$8,795,000	\$446,890	\$1,306,044	\$1,752,934	20%	\$7,042,066
Consumer Awareness	\$2,803,610	\$164,405	\$2,639,205	\$2,803,610	100%	-
Information Products and Brokering	\$8,500,000	\$458,398	\$721,970	\$1,180,368	14%	\$7,319,632
Market Challenges	\$105,222,650	\$3,329,628	\$15,713,671	\$19,043,298	18%	\$86,179,352
Pay for Performance	\$55,756,709	\$903,407	\$2,378,628	\$3,282,035	6%	\$52,474,674
Technical Services	\$62,097,185	\$2,714,937	\$12,391,011	\$15,105,948	24%	\$46,991,237
<b>Multi-Sector Solutions Chapter Total</b>	\$243,175,154	\$8,017,664	\$35,150,528	\$43,168,193	18%	\$200,006,962
<b>New Construction Chapter</b>						
New Construction - Market Rate	\$124,264,632	\$1,793,404	\$33,088,035	\$34,881,439	28%	\$89,383,193
<b>New Construction Chapter Total</b>	\$124,264,632	\$1,793,404	\$33,088,035	\$34,881,439	28%	\$89,383,193
<b>On-Site Power Chapter</b>						
Fuel Cells	\$11,310,030	\$86,779	\$11,526,250	\$11,613,029	103%	(\$303,000)
<b>On-Site Power Chapter Total</b>	\$11,310,030	\$86,779	\$11,526,250	\$11,613,029	103%	(\$303,000)

**Table 7 continued**

Initiative	Budget Approved as of March 31, 2020 <sup>a</sup>	Expended Funds <sup>b</sup>	Committed Funds <sup>c</sup>	Total Progress <sup>d</sup>	% of Approved Budget Committed <sup>e</sup>	Budget Approved Remaining Balance <sup>f</sup>
<b>Product and Appliance Standards Chapter</b>						
Product and Appliance Standards	\$21,699,000	\$161,705	\$16,987	\$178,692	1%	\$21,520,308
<b>Product and Appliance Standards Chapter Total</b>	\$21,699,000	\$161,705	\$16,987	\$178,692	1%	\$21,520,308
<b>Residential Chapter</b>						
Residential	\$49,641,366	\$2,640,963	\$3,156,226	\$5,797,189	12%	\$43,844,177
<b>Residential Chapter Total</b>	\$49,641,366	\$2,640,963	\$3,156,226	\$5,797,189	12%	\$43,844,177
<b>REV Technical Assistance Chapter</b>						
REV Connect	\$13,000,000	\$2,905,264	\$1,966,529	\$4,871,793	37%	\$8,128,207
<b>REV Technical Assistance Chapter Total</b>	\$13,000,000	\$2,905,264	\$1,966,529	\$4,871,793	37%	\$8,128,207
<b>Workforce Development and Training Chapter</b>						
Building Operations and Maintenance Partnerships	\$33,345,000	\$4,024,417	\$6,906,891	\$10,931,307	33%	\$22,413,693
Talent Pipeline	\$75,000,000	\$2,041,878	\$4,865,843	\$6,907,721	9%	\$68,092,279
<b>Workforce Development and Training Chapter Total</b>	\$108,345,000	\$6,066,294	\$11,772,734	\$17,839,028	16%	\$90,505,972
<b>Market Characterization &amp; Design Market Development</b>	\$20,650,000	\$7,689,991	\$2,848,400	\$10,538,391	51%	\$10,111,609
<b>NYS Cost Recovery Fee Market Development</b>	\$32,365,614	\$5,992,907	-	\$5,992,907	19%	\$26,372,708
<b>Total Market Development</b>	\$1,635,283,439	\$332,358,065	\$326,426,486	\$658,784,551	40%	\$976,498,888

\* Totals may not sum exactly due to rounding.

a Funds approved by DPS as of March 31, 2020.

b Invoices processed for payment by NYSERDA.

c Remaining funding obligated under a contract, purchase order, or incentive award and planned funding for contracts awarded and under negotiation.

d Sum of categories Expended and Committed Funds.

e Percentage of the committed budget.

f Difference between categories Budget Approved Funds and Committed Funds.

## 4 Innovation and Research Initiative Specific Results

**Table 8. Innovation and Research Initiative-Level Budgets and Spending**

See endnote section for more information.<sup>14,15</sup>

Initiative	Budget Approved as of March 31 2020 <sup>a</sup>	Expended Funds <sup>b</sup>	Committed Funds <sup>c</sup>	Total Progress <sup>d</sup>	% of Approved Budget Committed <sup>e</sup>	Budget Approved Remaining Balance <sup>f</sup>
<b>Building Innovation Chapter</b>						
NextGen HVAC	\$30,000,000	\$2,469,629	\$6,791,692	\$9,261,321	31%	\$20,738,679
<b>Building Innovation Chapter Total</b>	\$30,000,000	\$2,469,629	\$6,791,692	\$9,261,321	31%	\$20,738,679
<b>Clean Transportation Chapter</b>						
Electric Vehicles - Innovation	\$11,850,000	\$2,462,723	\$5,691,272	\$8,153,995	69%	\$3,696,005
Public Transportation and Electrified Rail	\$18,500,000	\$1,155,197	\$5,894,650	\$7,049,847	38%	\$11,450,153
<b>Clean Transportation Chapter Total</b>	\$30,350,000	\$3,617,920	\$11,585,921	\$15,203,841	50%	\$15,146,159
<b>Energy-Related Environmental Research Chapter</b>						
Energy-Related Environmental Research	\$37,800,000	\$3,822,327	\$10,408,229	\$14,230,556	38%	\$23,569,444
<b>Energy-Related Environmental Research Chapter Total</b>	\$37,800,000	\$3,822,327	\$10,408,229	\$14,230,556	38%	\$23,569,444
<b>Grid Modernization Chapter</b>						
DER Interconnection	\$6,300,000	\$2,462,807	\$2,161,629	\$4,624,436	73%	\$1,675,564
High Performing Electric Grid	\$110,500,000	\$9,114,758	\$31,219,595	\$40,334,353	37%	\$70,165,647
Power Electronics Manufacturing Consortium	\$16,700,000	\$16,700,000	-	\$16,700,000	100%	-
<b>Grid Modernization Chapter Total</b>	\$133,500,000	\$28,277,565	\$33,381,224	\$61,658,789	46%	\$71,841,211
<b>Innovation Capacity and Business Development Chapter</b>						
CleanTech Startup Growth	\$58,200,000	\$11,735,844	\$26,910,275	\$38,646,119	66%	\$19,553,881
Manufacturing Corps	\$12,000,000	\$3,445,781	\$835,000	\$4,280,781	36%	\$7,719,219
Novel Business Models and Offerings	\$16,100,000	\$1,537,491	\$4,714,997	\$6,252,489	39%	\$9,847,511
<b>Innovation Capacity and Business Development Chapter Total</b>	\$86,300,000	\$16,719,116	\$32,460,272	\$49,179,388	57%	\$37,120,612
<b>Renewables Optimization Chapter</b>						
Energy Storage Technology and Product Development	\$33,000,000	\$2,980,282	\$7,121,363	\$10,101,645	31%	\$22,898,355
National Offshore Wind Research & Development Consortium	\$22,500,000	\$2,019,663	\$5,608,350	\$7,628,013	34%	\$14,871,987
<b>Renewables Optimization Chapter Total</b>	\$55,500,000	\$4,999,946	\$12,729,713	\$17,729,658	32%	\$37,770,342
Market Characterization & Design Innovation & Research	\$250,000	\$653	-	\$653	0.3%	\$249,347
NYS Cost Recovery Fee Innovation & Research	\$6,639,115	\$777,063	-	\$777,063	12%	\$5,862,052
<b>Total Innovation and Research</b>	\$380,339,115	\$60,684,218	\$107,357,052	\$168,041,270	44%	\$212,297,845

Table notes are on the next page

- \* Totals may not sum exactly due to rounding.
- a Funds approved by DPS as of March 31, 2020.
- b Invoices processed for payment by NYSERDA.
- c Remaining funding obligated under a contract, purchase order, or incentive award, and planned funding for contracts awarded and under negotiation.
- d Sum of categories Expended and Committed Funds.
- e Percentage of the committed budget.
- f Difference between categories Budget Approved Funds and Committed Funds.

**Table 9. Market Development and Innovation and Research Portfolio**

Committed Benefits Progress to Date—Annual  
See endnote section for more information.<sup>16</sup>

Initiative	Completed Projects through Dec 31, 2019 with Adjustments	Completed Projects through 1/1/20 - 3/31/20	Total Completed Projects through March 31, 2020	Current Pipeline Through March 31, 2020 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Direct Planned Benefits Through Q1 2020	% of Cumulative Annual Direct Planned Benefits Through Q1 2020	Total Cumulative Annual Direct Planned Benefits through 2025	% of Total Cumulative Annual Direct Planned Benefits through 2025
<b>Market Development</b>									
Energy Efficiency (MWh)	581,708	62,869	644,577	1,787,377	2,431,954	2,248,725	108%	4,386,036	55%
Energy Efficiency (MMBtu)	7,418,899	702,134	8,121,033	7,103,124	15,224,157	16,003,454	95%	30,953,525	49%
Energy Efficiency (MW)	16	2	18	119	137	*	-	*	-
Renewable Energy (MWh)	232,382	888	233,270	64,094	297,364	*	-	*	-
Renewable Energy (MW)	258	-	258	3	261	*	-	*	-
CO2e Reductions (metric tons)	1,122,240	63,850	1,186,090	1,149,129	2,335,219	*	-	*	-
Customer Bill Savings (\$ million)	\$172.56	\$14.52	\$187.08	\$295.77	\$482.85	*	-	*	-
Leveraged Funds (\$ million)	\$1,208.26	\$130.67	\$1,338.92	\$1,865.49	\$3,204.42	*	-	*	-
<b>Innovation and Research</b>									
Energy Efficiency (MWh)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MMBtu)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MW)	-	-	-	-	-	*	-	*	-
Renewable Energy (MWh)	-	-	-	-	-	*	-	*	-
Renewable Energy (MW)	-	-	-	-	-	*	-	*	-
CO2e Reductions (metric tons)	-	-	-	-	-	*	-	*	-
Customer Bill Savings (\$ million)	-	-	-	-	-	*	-	*	-
Leveraged Funds (\$ million)	\$349.02	\$3.14	\$352.16	\$533.74	\$885.90	*	-	*	-
<b>Total Energy Efficiency (MWh)</b>	<b>581,708</b>	<b>62,869</b>	<b>644,577</b>	<b>1,787,377</b>	<b>2,431,954</b>				
<b>Total Energy Efficiency (MMBtu)</b>	<b>7,418,899</b>	<b>702,134</b>	<b>8,121,033</b>	<b>7,103,124</b>	<b>15,224,157</b>				
<b>Total Energy Efficiency (MW)</b>	<b>16</b>	<b>2</b>	<b>18</b>	<b>119</b>	<b>137</b>				
<b>Total Renewable Energy (MWh)</b>	<b>232,382</b>	<b>888</b>	<b>233,270</b>	<b>64,094</b>	<b>297,364</b>				
<b>Total Renewable Energy (MW)</b>	<b>258</b>	<b>-</b>	<b>258</b>	<b>3</b>	<b>261</b>				
<b>Total CO2e Reductions (metric tons)</b>	<b>1,122,240</b>	<b>63,850</b>	<b>1,186,090</b>	<b>1,149,129</b>	<b>2,335,219</b>				
<b>Total Customer Bill Savings (\$ million)</b>	<b>\$172.56</b>	<b>\$14.52</b>	<b>\$187.08</b>	<b>\$295.77</b>	<b>\$482.85</b>				
<b>Total Leveraged Funds (\$ million)</b>	<b>\$1,557.27</b>	<b>\$133.81</b>	<b>\$1,691.08</b>	<b>\$2,399.23</b>	<b>\$4,090.32</b>				

\* Metric to be tracked and reported, although specific planned benefit was not ordered.

**Table 10. Market Development and Innovation and Research Portfolio**

Committed Benefits Progress to Date—Lifetime

Initiative	Completed Projects through Dec 31, 2019 with Adjustments	Completed Projects through 1/1/20 - 3/31/20	Total Completed Projects through March 31, 2020	Current Pipeline Through March 31, 2020 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Lifetime Direct Planned Benefits Through Q1 2020	% of Cumulative Lifetime Direct Planned Benefits Through Q1 2020	Total Cumulative Lifetime Direct Planned Benefits through 2025	% of Total Cumulative Lifetime Direct Planned Benefits through 2025
<b>Market Development</b>									
Energy Efficiency (MWh)	8,236,746	947,076	9,183,822	25,362,881	34,546,702	*	-	*	-
Energy Efficiency (MMBtu)	113,988,041	11,586,666	125,574,707	98,509,405	224,084,112	*	-	*	-
Renewable Energy (MWh)	1,614,733	12,564	1,627,297	667,650	2,294,947	3,130,274	73%	12,034,480	19%
CO2e Reductions (metric tons)	15,793,347	990,869	16,784,216	15,117,727	31,901,943	32,024,023	100%	62,879,577	51%
Customer Bill Savings (\$ million)	\$2,260.84	\$219.31	\$2,480.15	\$4,094.55	\$6,574.71	\$6,447.33	102%	\$13,170.85	50%
Leveraged Funds (\$ million)	\$1,208.26	\$130.67	\$1,338.92	\$1,865.49	\$3,204.42	\$3,183.87	101%	\$7,009.81	46%
<b>Innovation and Research</b>									
Energy Efficiency (MWh)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MMBtu)	-	-	-	-	-	*	-	*	-
Renewable Energy (MWh)	-	-	-	-	-	*	-	*	-
CO2e Reductions (metric tons)	-	-	-	-	-	*	-	*	-
Customer Bill Savings (\$ million)	-	-	-	-	-	*	-	*	-
Leveraged Funds (\$ million)	\$349.02	\$3.14	\$352.16	\$533.74	\$885.90	\$930.17	95%	\$1,707.20	52%
<b>Total Energy Efficiency (MWh)</b>	<b>8,236,746</b>	<b>947,076</b>	<b>9,183,822</b>	<b>25,362,881</b>	<b>34,546,703</b>	-	-	-	-
<b>Total Energy Efficiency (MMBtu)</b>	<b>113,988,041</b>	<b>11,586,666</b>	<b>125,574,707</b>	<b>98,509,405</b>	<b>224,084,112</b>	-	-	-	-
<b>Total Renewable Energy (MWh)</b>	<b>1,614,733</b>	<b>12,564</b>	<b>1,627,297</b>	<b>667,650</b>	<b>2,294,947</b>	-	-	-	-
<b>Total CO2e Reductions (metric tons)</b>	<b>15,793,347</b>	<b>990,869</b>	<b>16,784,216</b>	<b>15,117,727</b>	<b>31,901,943</b>	-	-	-	-
<b>Total Customer Bill Savings (\$ million)</b>	<b>\$2,260.84</b>	<b>\$219.31</b>	<b>\$2,480.15</b>	<b>\$4,094.55</b>	<b>\$6,574.71</b>	-	-	-	-
<b>Total Leveraged Funds (\$ million)</b>	<b>\$1,557.27</b>	<b>\$133.81</b>	<b>\$1,691.08</b>	<b>\$2,399.23</b>	<b>\$4,090.32</b>	-	-	-	-

\* Metric to be tracked and reported, although specific planned benefit was not ordered.

## Appendix A. Near-Term Milestones

### Near-Term Milestones for Code to Zero

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Issue awards from Alternative Enforcement Structures solicitation.	The solicitation is expected to be issued in Q4 2020 and awards will follow.
	2020	Issue awards from pilot #2 Stretch to Zero assistance solicitation.	The solicitation for Stretch to Zero pilots is expected to be released in Q4 2020 following market research and voice of customer in Q3 2020.
	2020	Contract for development of NY Stretch-Energy (IECC2021).	Mini-bid to be issued Q3 2020.
	2020	Issue awards from RFI for Technical input to NYStretch 2022.	The RFI is expected to be released in Q4 2020.

### Near-Term Milestones for Energy Management Technology

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	NYSERDA issues challenge to entrepreneurs and innovators to explore RTEM data sets to advance efforts at demand reduction and peak load shaping.	Early discussions and outline of future RTEM data PON are underway with the goal to launch by Q3 2020.
	2020	NYSERDA makes publicly available anonymized RTEM project data to support market confidence in performance of RTEM systems and services.	Finalizing the design/launch of the RTEM data platform where qualified vendors will be able to securely upload data files for scrubbing/standardization [project haystack format] and further market analysis. Launch set for end of Q2 2020.

### Near-Term Milestones for Real Estate Tenant

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Launch training to educate stakeholders about energy-efficient tenant spaces.	NYSERDA is in the process of contracting with a consortium of highly respected organizations to design and deliver the training to all relevant stakeholder groups.

**Near-Term Milestones for Solar Plus Energy Storage**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Publish and release case studies from recently completed projects to provide timely feedback to the market.	Project details have been compiled and once projects have been completed, case studies will be developed.

**Near-Term Milestones for Energy Management Practices Initiative**

Strategic Energy Management

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Launch self-serve, web-based SEM training as an alternative option to the cohort-based offering.	Program in development, to be launched later this year and will serve as the SEM training platform based on the U.S. Department of Energy's 50001 Ready Navigator.
	2020	Release RFP for commercial SEM Energy Coach.	This RFP is in development and will be launched in Q3 2020.
	2020	Release RFP for Energy Coach for additional industrial cohorts.	This RFP is in development and will be released in Q2 2020.

**Near-Term Milestones for New Construction—Low- to Moderate-Income**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2019	Announce awards for Round 2 of Buildings of Excellence.	Round 2 of the Buildings of Excellence program was released in October 2019, and proposals are due in May 2020. NYSERDA extended the due date from April to May in response to the COVID-19 State of Emergency.

### Near-Term Milestones for New York State Healthy Homes Value-Based Payment Pilot

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Commencement of pilot field work.	Commencement of pilot field work is contingent on the outcome of NYSERDA's upcoming Request for Qualifications for energy/housing service providers.
	2020	Assign pilot participation status to qualified energy/housing service providers, following the release of a Request for Qualifications.	NYSERDA's Request for Qualifications for energy/housing service providers is currently under internal review. Expected to be released in Q2 2020.
	2020	Secure all submissions of social determinants of health template for VBP Arrangement integration (rolling).	Social determinants of health templates associated with Pilot VBP Arrangements is occurring on a rolling basis. To date, one submission is finalized and four are pending.
	2020	Finalize specification list of healthy homes interventions to address asthma and household injury.	Specification list is drafted and currently being edited for consistency with related pilot documents.

### Near-Term Milestones for RetrofitNY—Low- to Medium-Income Households

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	A demand charter is signed by building owners to aggregate and demonstrate potential demand for deep energy/net zero retrofits.	Charter document drafted and currently in testing with stakeholders to finalize format.

### Near-Term Milestones for Clean Energy Siting and Soft-Cost Reduction

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Issue awards from release of Soft-Cost Innovation solicitation.	NYSERDA expects to issue the Soft-Cost Innovation solicitation in Q3 2020, with the first awards announced in Q4 2020.

### Near-Term Milestones for Consumer Awareness

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Buy and execute media placements.	Campaign launch is pending; once a date is finalized the media placements will be negotiated and purchased.
	2020	Develop an inbound communications strategy and architecture including appropriate referral destinations and responses for anticipated areas of interest.	Strategy development progressing well; collaboration with Con Edison is underway to ensure alignment and agreement on the final inbound strategy and architecture.
	2020	Develop communications strategy for contractor, manufacturing, and distributor engagement.	Campaign launch is pending, once a date for the campaign and the associated program offers are finalized the communications strategy will be developed.
	2020	Develop landing environment.	Landing environment is 75% built and on hold pending program finalizations and collaboration with Con Edison.
	2020	Develop messaging and creative content.	Messaging has been developed; however, creative production has been halted due to COVID-19 and will be rescheduled once PAUSE is lifted. Locations and on-screen talent will need to be re-selected based on availability.
	2020	Measure/analyze assets, adjust to optimize campaign performance.	Analysis will be performed after launch of the campaign.
	2020	Media and landing environment go live in market.	Media and landing environment will be live after launch of the campaign.

### Near-Term Milestones for Information Products and Brokering

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Initial Asset Data pilot(s) are completed.	A progress report was issued in December 2019 and further analysis is ongoing to refine residential analysis and improve commercial match rates, as well as to present findings to key stakeholders.
	2020	Asset Data Matching pilots and DER pilot platform testing completed with recommendations.	Efforts to incorporate additional data, data analyses, and evaluations are ongoing with possible project expansions in consideration.
	2020	Host second hackathon, with a focus on identifying solutions that overcome barriers to adoption of energy efficiency and clean energy for small- to medium-commercial owners. Attract 175 proposals. Issue one to four awards to support market demonstration of solutions developed by winners.	The second hackathon is scheduled for Q4 2020.

**Near-Term Milestones for Market Challenges** (formerly Commercial and Industrial Carbon Challenge)

Commercial and Industrial Carbon Challenge

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Issue awards following release of competitive solicitation.	Eight proposals have been issued; five commercial and three industrial.

**Near-Term Milestones for Pay for Performance (P4P)**

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Release procurement for Portfolio Managers targeting the residential sector with utility co-administrator.	Solicitation authored and under review by NYSERDA and utility co-administrator.
	2020	Launch commercial sector pilot.	Currently finalizing Portfolio Manager contracts and onboarding to prepare for pilot launch later this year.

**Near-Term Milestones for New Construction—Market Rate**

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Announce awards for Round 2 of Buildings of Excellence.	Round 2 of the Buildings of Excellence program was released in October 2019, and proposals are due in May 2020. NYSERDA extended the due date from April to May in response to the COVID-19 State of Emergency.
	2020	Announce awards for Round 3 of Net Zero Energy Commercial/Carbon Competition.	The third round of the Net Zero Energy for Economic Development Program will be released as part of Round 10 of the Consolidated Funding Application.

**Near-Term Milestones Heat Pumps Phase 1 (2017)**

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	ASHP Case studies developed and deployed in the market, along with current resources from regional and national organizations.	Monitoring of heat pump demonstration sites is wrapping up, allowing for analysis and reporting on actual savings—including case studies planned for Q3 2020 release.
✓	2020	Close the GSHP Rebate program in timing with the launch of the utility statewide heat pump program.	GSHP Rebate Program closed March 31, 2020 and the New York State Clean Heat Program opened April 1, 2020.

**Near-Term Milestones for Residential (formerly Engaging New Markets)**

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Deploy standard package approach for energy load reduction measures.	Deployed standard packages to air seal and insulate homes; air sealing (basic), attic insulation, and basement rim joists (good), wall insulation added to good package (better), and low-e windows added to the better package (best).
✓	2020	Deploy revised GJGNY energy audit standards.	Revised GJGNY energy audit standards were deployed on January 1, 2020. The revised standards included a new audit tool with simple data inputs and a streamlined customer facing report as well as new technical standards for in-field energy audits.

**Near-Term Milestones for Reforming the Energy Vision (REV) Connect**

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Contract with platform partner.	A contract with the platform partner has been executed.
	2020	Release NYSERDA market test PON.	PON ready but release delayed as result of COVID-19.
	2020	Initial in-field market tests enter the market.	To be completed after proposals are received via market test PON.

**Near-Term Milestones for Building Operations and Maintenance Partnerships (formerly Workforce Development Industry Partnerships)**

Complete ✓	Time Frame	Milestone	Explanation of Progress
---------------	------------	-----------	-------------------------

✓	2020	Issue and periodically modify solicitations to support the development of building operations and maintenance training initiatives that address skill gaps and facilitate career paths with multiple due dates, as appropriate.	The Building O&M PON was modified Q1 and has multiple due dates into 2021.
---	------	---	--

**Near-Term Milestones for Talent Pipeline (formerly Clean Technology and Energy Efficiency Talent Pipeline)**

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Work with State University of New York, New York State Department of Labor, and Empire State Development to issue training infrastructure and capacity building solicitation focused on offshore wind.	Several meetings have been held with the Governor's Office, State University of New York, New York State Department of Labor, and other stakeholders to determine administrative roles and to develop a solicitation for the Offshore Wind Training Institute.
✓	2020	Issue an open enrollment program(s), or address needs through training providers under umbrella agreements, to provide financial incentives to offset training and certification costs related to heat pump and other high-priority energy efficiency technologies, including support for manufacturer training.	The open enrollment solicitation was issued in 2019. To date, nine contracts have been executed and six are in contract negotiations. Three additional proposals have been received and are being evaluated by a scoring committee.
	2020	Issue a career pathway solicitation with multiple due dates., if needed, focused on heat pump training that places a priority on training for disadvantaged communities, low-income workers, and veterans.	The Career Pathway solicitation is in the process of being added to the workforce Consolidated Funding Application.

**Near-Term Milestones for NextGen HVAC**

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Issue awards following release of third innovation challenge.	Awards will be issued by the end of 2020.

**Near-Term Milestones for Electric Vehicles—Innovation**

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Complete bench-scale prototypes of economically viable technologies that enable smart charging.	Projects are underway and expected to produce prototypes in 2020.

	2020	Fast-charging station network expanded to 30 locations statewide along major interstate corridors.	The number of fast-charging stations continues to increase along major interstate corridors. There are now approximately 20 such locations in NYS.
--	------	--	--

**Near-Term Milestones for Public Transportation and Electrified Rail**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Issue awards for third competitive solicitation for the development and demonstration of public transportation technologies.	NYSERDA expects to issue a new solicitation for public transportation technologies later in 2020.

**Near-Term Milestones for Energy-Related Environmental Research**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Issues awards from solicitations released in 2020.	A Flexergy mini-bid for CLIMAID Projections was awarded to Columbia in Q1 and will start in Q2 2020. A Flexergy mini-bid for Economic Impact Assessment of Climate Change in New York State was approved and fully executed in Q1 2020. A Flexergy mini-bid for Technical Assistance for Climate Change Impacts and Adaptation was approved in Q1 2020 and is expected to be fully executed in Q2 2020. A solicitation for Geophysical and Geotechnical Survey Components-NY Bight was awarded for Q1 2020 to Ecology and Environment and is expected to be completed in five years. A mini-bid for Offshore Wind Fisheries Working Group Support was approved for TetraTech and was started in Q1 2020 with expected completion in two years.

### Near-Term Milestones for High-Performing Grid

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Issue awards following release of solicitation #6.	PON 4128 Round 3 contract awards planned for Q4 2020.

### Near-Term Milestones for Cleantech Start-up Growth Ignition Grants

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Issuing awards from new solicitation.	Solicitation being developed and is expected to be released in Q2/Q3 2020.
✓	2020	Begin demonstration projects	Executed ignition contract projects include demonstration projects that have begun.

### Near-Term Milestones for Cleantech Start-up Growth Incubators

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Begin 8 new demonstration projects.	Incubators are encouraged to facilitate demo projects, but projects have yet to begin.

### Near-Term Milestones for Cleantech Start-up Growth Innovation Advisors

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Issuance of awards from solicitation.	The solicitation is expected to launch by the end of Q2 2020.

### Near-Term Milestones for Cleantech Start-up Growth Proof-of-Concept Centers

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Executive director hired to oversee Proof-of-Concept Centers (POCC).	The contractor is actively recruiting candidates for the role and expects to select someone by Q3 2020.

**All near-term milestones have been completed and previously reported for the following programs:**

Advancing Agricultural Energy Technologies	Offshore Wind Master Plan
Clean Energy Communities	Offshore Wind Pre-Development Activities
Cleantech Start-up Growth (76 West)	On-Site Energy Manager
Cleantech Start-up Growth (Entrepreneurs-In-Residence)	P-12 Schools
Cleantech Start-up Growth (ICC Engagement)	Power Electronics Manufacturing Consortium
Community Energy Engagement	Product and Appliance Standards (formerly Underutilized Product Support)
Electric Vehicles—Rebate	Low Income Single-Family
Energy Storage Technology and Product Development	Moderate Income Single-Family
Fuel Cells (Inactive)	Solar for All
Greenhouse Lighting and Systems Engineering (GLASE)	Reducing Barriers to Deploying Distributed Energy Storage
Low-Income Forum on Energy	Renewable Heat NY—Clean and Efficient Biomass Heating
Low- to Moderate-Income Multifamily	REV Campus Challenge
Manufacturing Corps	Technical Services
National Offshore Wind Research and Development Consortium	
Novel Business Models and Offerings	

# Endnotes

---

- 1 Case 14-M-0094 – Proceeding on Motion of the Commission to Consider a Clean Energy Fund, Ordering Authorizing the Clean Energy Fund Framework. Issued and effective January 21, 2016.
- 2 To facilitate transparent and orderly tracking of these ongoing filings, a designated matter number related to Case 14-M-0094 was created by Notice issued by the New York State Public Service Commission on May 6, 2016 for Investment Plan chapters and related filings. As of May 6, 2016, all filings related to the Clean Energy Fund Investment Plan are filed in Matter Number 16-00681, In the Matter of the Clean Energy Fund Investment Plan.
- 3 <http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?Mattercaseno=18-M-0084>
- 4 NYSERDA and DPS. 2018. "New Efficiency: New York". NYSERDA. [nyserda.ny.gov/About/Publications/New-Efficiency](http://nyserda.ny.gov/About/Publications/New-Efficiency).
- 5 Beginning with Q4 2016, NYSERDA updated emission factors for natural gas, #2 oil, #6 oil, kerosene, propane, wood, and steam to be consistent with emission factors used in the updated NYS Greenhouse Gas Inventory ([nyserda.ny.gov/About/Publications/EA-Reports-and-Studies/Energy-Statistics](http://nyserda.ny.gov/About/Publications/EA-Reports-and-Studies/Energy-Statistics)). These factors are derived from EPA's February 2016 State Inventory Tool release (<https://www.epa.gov/statelocalclimate/state-inventory-and-projection-tool>). Steam emission factors have been updated to be consistent with New York City's updated Greenhouse Gas Inventory. ([http://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/NYC\\_GHG\\_Inventory\\_2014.pdf](http://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/NYC_GHG_Inventory_2014.pdf)).
- 6 Per the Clean Energy Advisory Council (CEAC) Metrics, Tracking and Performance Assessment (MTPA) Working Group, NYSERDA has adopted a marginal electricity grid emission factor of 1,103 pounds CO<sub>2</sub>e/MWh for projects completed after 2015 (<http://documents.dps.ny.gov/public/MatterManagement/MatterFilingItem.aspx?FilingSeq=190731&MatterSeq=50399>). Projects completed prior to 2016 will maintain the 1,160 pounds CO<sub>2</sub>e/MWh previously used, based on analysis of grid emissions at that time.
- 7 Customer Bill Savings are calculated as direct energy bill savings realized by customers participating in NYSERDA's programs.
- 8 As of Q4 2019, NYSERDA's method for reporting Clean Energy Communities program benefits in connection with RGGI funds changed to more accurately reflect community locations (CEF, non-CEF) as well as the proportion of funds now being committed by CEF vs. RGGI.
- 9 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development and Innovation and Research Portfolio Level Budgets and Spending table, an additional \$101.8 million or 54% of the total approved budget to date, would be included with total NYSERDA commitments.
- 10 Initiative commitments that are in excess of their total budgets are in anticipation of program attrition. No initiative will have total expenditures in excess of that initiative's total budget at the close of the program.
- 11 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development Initiative Research and Spending table, an additional \$48,546,459 or 47.5% of the total approved budget to date, would be included with total NYSERDA commitments.
- 12 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 13 Initiative commitments that are in excess of their total budgets are in anticipation of program attrition. No initiative will have total expenditures in excess of that initiative's total budget at the close of the program.
- 14 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Innovation and Research Initiative Budget and Spending table, an additional \$53,266,510 or 57% of the total approved budget to date, would be included with total NYSERDA commitments.
- 15 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 16 Leveraged funds from the National Offshore Wind Consortium initiative are inclusive of contributions from the Department of Energy.



NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975.

To learn more about NYSERDA's programs and funding opportunities, visit [nyserdera.ny.gov](http://nyserdera.ny.gov) or follow us on Twitter, Facebook, YouTube, or Instagram.

**New York State  
Energy Research and  
Development Authority**

17 Columbia Circle  
Albany, NY 12203-6399

**toll free:** 866-NYSERDA  
**local:** 518-862-1090  
**fax:** 518-862-1091

[info@nyserdera.ny.gov](mailto:info@nyserdera.ny.gov)  
[nyserdera.ny.gov](http://nyserdera.ny.gov)



**State of New York**

Andrew M. Cuomo, Governor

**New York State Energy Research and Development Authority**

Richard L. Kauffman, Chair | Alicia Barton, President and CEO