

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

Final Report | March 2021



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

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

### **Our Vision:**

New York is a global climate leader building a healthier future with thriving communities; homes and businesses powered by clean energy; and economic opportunities accessible to all New Yorkers.

### **Our Mission:**

Advance clean energy innovation and investments to combat climate change, improving the health, resiliency, and prosperity of New Yorkers and delivering benefits equitably to all.



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

*Final Report*

Prepared by:

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

Albany, NY

# About This Report

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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 Clean Energy Dashboard on NYSEDA's website, along with metrics data for utility programs. Over time, NYSEDA anticipates that this report will evolve to focus on higher level summary and qualitative progress information not contained in the scorecard or the 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 reflect MD and I&R portfolios only.

The report represents quarterly and cumulative activity through December 31, 2020 and achievements of all initiatives approved prior to and during the reporting period. This includes transition programs in the Resource Acquisition Transition section 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 NYSEDA's programs through December 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 NYSEDA 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.

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# 1 Overview

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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 State's energy system more affordable and resilient as well as advance clean energy and climate goals. Energy efficiency is a cornerstone of the 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 (Climate Act) 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 Climate Act also adopted the following clean energy goals:

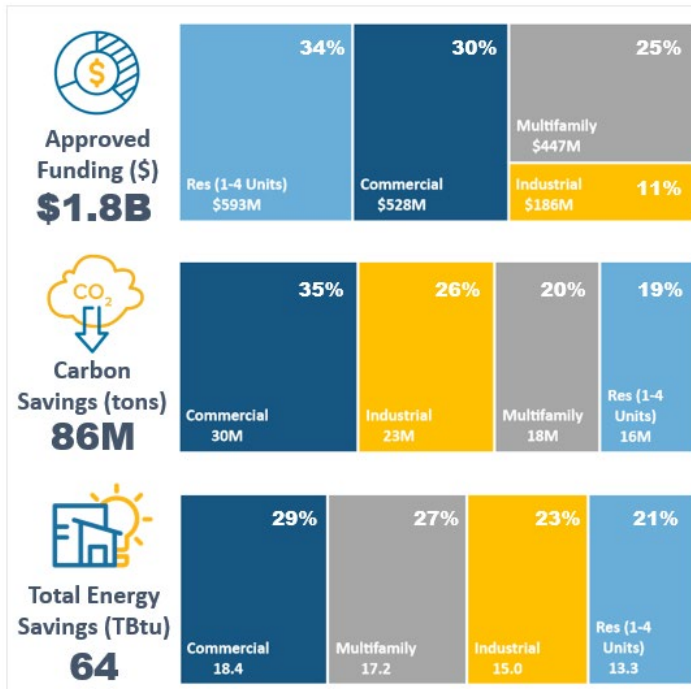
- Six thousand megawatts (MW) of solar by 2025
- Seventy percent renewable electricity by 2030
- Nine thousand MW of offshore wind by 2035
- Zero-emission electricity by 2040

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 comprise more than \$1.8 billion of investment in energy efficiency across the commercial, residential, multifamily, and industrial sectors. These approved investments in energy efficiency are expected to deliver 86 million metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) savings over the life of the installed measures, with greater impact anticipated as the remainder of the CEF Portfolio is programmed and deployed.

## Energy Efficiency

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



Through the Market Development (MD) 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 emission 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 billions of dollars 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 December 31, 2020 and accounts for overlap across portfolios where it is known to occur.

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

See endnote section for more information.<sup>5</sup>

CEF Expected Investment and Benefits vs 10-Year Minimum Goals (as of December 31, 2020)  
Market Development - Innovation & Research - NY Sun - NY Green Bank

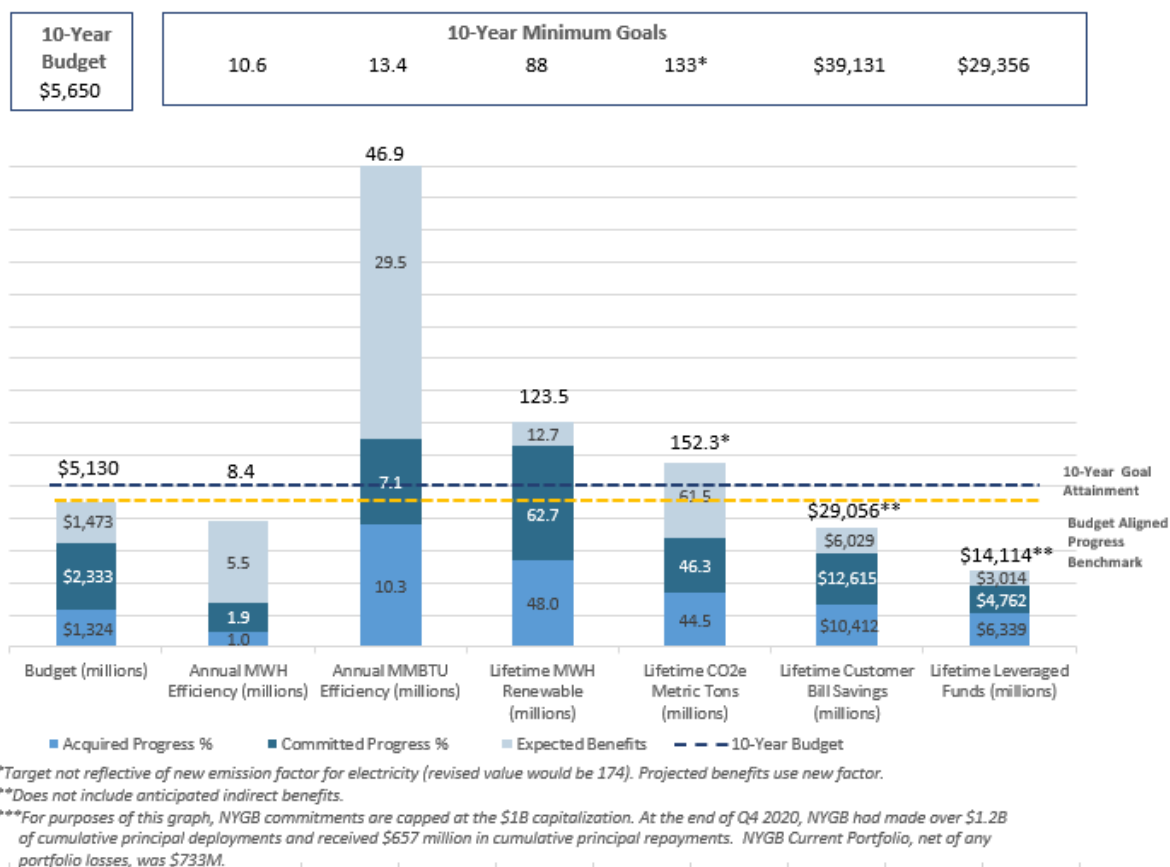


Figure 1 illustrates<sup>6</sup> that deployment of funds is generally well-aligned with energy and carbon KPI progress currently. Here, the value Cumulative Progress (committed and acquired budgets and benefits) is combined with the value Expected Benefits (approved but not yet committed budgets and benefits) to demonstrate total progress toward NYSERDA’s targets. While progress includes newly authorized NY Sun funding and benefits, the overall 10 year budget and 10 year minimum goals have not been updated to reflect the NY Sun expansion.

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.

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 2020 year-end, a total of 69 MD and Innovation and Research (I&R) initiatives have been developed by NYSERDA and filed with the Public Service Commission, of which 53 initiatives were considered active, engaging the marketplace during this period. As of January 1, 2020, each of the original resource acquisition transition initiatives were no longer considered active in the marketplace and all low- to moderate-income (LMI) related plans were transitioned to management under the Statewide Low- and Moderate-Income Portfolio Implementation Plan or LMI Joint Plan.<sup>8</sup>

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 New York State on PAUSE Executive Order, and as such, these plans would now be considered aggressive from a near-term planning and performance measurement standpoint.

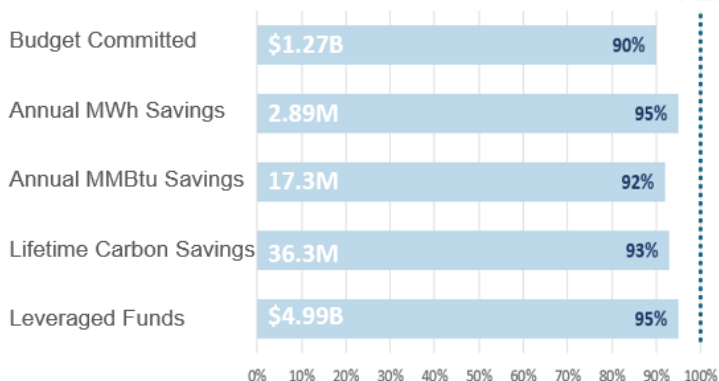
## **Performance to Plan**

NYSERDA closely monitors MD and I&R portfolio performance, specifically measuring each initiative against its investment plan forecast of budget and benefits over time. With 2020 now concluded the full impact of COVID-19 on NYSERDA's portfolio of programs is starting to become clearer and appropriate actions are being taken to reinforce support for various markets where possible. NYSERDA will continuously seek market input to refine expectations for near-term progress, incorporating what has been learned into adjusted forecasts to better serve stakeholders assessing the progress and to strengthen NYSERDA's ability to manage each individual program effectively.

The following figure is a high-level cumulative view of NYSERDA's MD and I&R portfolio cumulative performance to plan. NYSERDA's planned benefits through Q4 2020 are defined as 100% of years 2016–2020. Indirect planned impacts will be included as they are measured but are not currently a factor in performance measurement, with the expectation that they will be delivered in the second half of the 10-year CEF timeline.

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

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

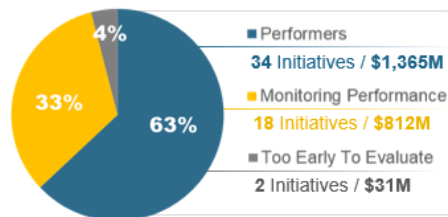


Q4 Plan

## Portfolio Initiative Performance

A blend of quantitative and qualitative measures are used to categorize the status of the CEF portfolio's (55) active initiatives (those engaging the market) in relationship to our expected performance & accomplishments to date. Budget totals by category are provided for scale.

As the portfolio is progressively built, 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 end of the year despite the economic conditions resulting from the pandemic. While the portfolio fell short of funding commitments for 2020 as anticipated, many programs outpaced the financial shortfall with a strong benefit finish to the year. The majority of active initiatives are still considered performers with four top carbon impact initiatives that remain characterized as monitoring, described in detail below.

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

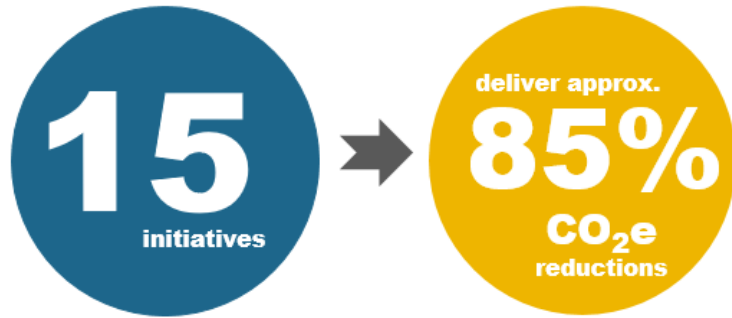
In NYSERDA's MD and I&R portfolio, 15 key initiatives currently account for approximately 85% of the expected lifetime CO<sub>2</sub>e benefits and 48% of the total approved budget. These top contributors also include a very strong focus on energy efficiency, not unlike the majority of CEF programs. The makeup of this list evolved at year's end due to the adoption of the LMI "Joint Plan" as noted earlier, with several expanded initiatives now arriving in the top 15 carbon impact list.

## Top 15 Performance

Categorizing the status and quantity of the largest carbon savings initiatives within the portfolio in relationship to performance against plan through current period.



## 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 shifted in Q4 2020 with four programs currently monitored. Their performance is attributed to delays engaging the market for some programs and the impact of the pandemic on others. Nine mature programs categorized as Performers are still showing strong results at this point in the year.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO <sub>2</sub> e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO <sub>2</sub> e Savings	
Energy Management Technology	14%	79%	92%	The Real Time Energy Management (RTEM) program has sunset its commercial and industrial incentive offer due to achievement of market exit goals and exhaustion of program cost-share funds. This initiative will continue to support multifamily RTEM projects as well as launch a new market offer called "RTEM + Tenants" to support market adoption of energy management technologies in commercial tenant spaces.
Building Operations and Maintenance Partnerships	7%	87%	90%	Six new project applications were received on the only due date in Q4, and 5 projects are being funded. Contract modifications continued to accommodate adjusted training schedules and a shift of most trainings from in-person to online. Training activity increased overall in Q4 as more projects were able to resume instruction that had been delayed. Discussions were held with potential proposers of future solicitation rounds.

**Table 1 continued**

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO <sub>2</sub> e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO <sub>2</sub> e Savings	
Technical Services	5%	155%	146%	This multisector initiative serves a combination of commercial, industrial, multifamily, and agriculture sectors and continues to see good market participation across these sectors. The FlexTech Program is continuing to offer up to 100% cost share on eligible studies in 2021. The Indoor Air Quality focused studies, which are evaluating safe and efficient building operation, are nearing completion.
Energy Management Practices	5%	86%	88%	The Strategic Energy Management Program offering, SEM On Demand, received its first application for participation in Q4. Program uptake is slower than expected for Industrial On-Site Energy Manager and SEM On Demand, and a marketing campaign to bolster awareness was developed in Q4 with anticipated launch in Q1 2021.
New Construction – LMI	4%	80%	55%	The New Construction LMI funding met its commitment goals for 2020. This was due to a strong housing market in the open enrollment programs and a greater than expected participation of affordable housing in the Buildings of Excellence competition.
LMI Multifamily	3%	99%	123%	The Multifamily Performance Program saw an increased number of applications in Q4 2020 setting a new high for the program under the CEF and confirming the need for a comprehensive energy retrofit program in the multifamily low- to moderate-income sector. Based on market insight, this trend is anticipated to continue in Q1 2021.
Electrical Vehicles – Rebate	2%	106%	118%	The pace of EV rebates accelerated in Q4 2020, setting a new high for a calendar quarter at 5,200 rebates, a 50% increase over the previous high. The fast pace of EV sales in Q4 helped New York State increase its EV sales significantly in 2020 compared to 2019.
Single Family – Low Income	2%	107%	105%	Higher than projected program expenditures and savings are attributed to the fact that EmPower saw an increase in production over what had been projected for the year, a result of the continuation of building the pipeline of projects through low-income referrals from utilities during the pause in in-unit work. In addition, we incorporated temporary program modifications intended to aid in industry recovery and assist residents that may be affected by economic downturn. These temporary Covid-19 modifications include increasing the cost cap for projects from \$7k to \$10k to allow more cost-effective work to be done per home, and the inclusion of a \$200/project adder to offset the cost of PPE for EmPower contractors.
REV Campus Challenge	2%	148%	103%	This initiative continues to attract new members, offer cost-shared technical assistance and peer sharing. An energy committee with the Commission of Independent Colleges and Universities (CICU) was formed at the end of 2020 with an aim to increase participation from private universities and drive progress toward Climate Act goals. Similar work with State University of New York and New York Power Authority is underway.
	44%			

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO <sub>2</sub> e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO <sub>2</sub> e Savings	
Clean Energy Communities	9%	101%	82%	The release of the Clean Energy Communities (CEC) Leadership Round has been delayed by COVID-19 which can be observed in slowing commitments compared to the original plan. NYSERDA is in the process of finalizing the Clean Energy Communities Leadership Round which will build on the program's success to date and drive the next level of impact. Launch of the Leadership Round is expected in Q1 2021.
Market Challenges	5%	44%	64%	The Empire Building Challenge received approximately 40 applications from real estate portfolio owners to partner with NYSERDA on this initiative. The selected real estate portfolio owners are conducting technical analysis and beginning to develop their retrofit proposals. NYSERDA anticipates issuing the first funding opportunity for retrofit proposals in Q3 2021, with initial awards announced by end of 2021.  The release of the Commercial and Industrial Carbon Challenge was delayed in 2020 due to COVID 19. It is now scheduled to be released Q2 2021 in the consolidated funding application with awards and therefore contracting until end of 2021.
New Construction - Market Rate	5%	65%	53%	Through the end of Q4, both market rate and LMI housing maintained a strong pace compared to prior year data. In our open enrollment programs, application volume and project size were both up a bit, with more projects seeking higher levels of performance as compared to last year. 2020 market participation for housing put the program in good position to continue its pivot to only serving carbon neutral housing in the future. The Buildings of Excellence also completed its Round 2 selection and will be awarding 14 projects for a total of \$13M (MR+LMI) funding in March. Round 3 of the competition is likely to be in market at the end of Q3 2021. With no new CFA launch in 2020 due to COVID, progress in general was stifled. Funding allocated to NZEED (\$15M) did not get committed and participation in the Commercial New Construction Program suffered as well. The CFA will launch in May of 2021, and a revised offering for NZEED will be included. Several large commercial projects have engaged with program staff late 2020/early 2021, indicating a possible rebound to the commercial market activity that stalled in 2020. A smaller impact on commitments was channel partner engagements, which mostly paused all market activity from March through August.

**Table 2. continued**

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO <sub>2</sub> e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO <sub>2</sub> e Savings	
Heat Pumps Phase 1 (2017)	2%	96%	75%	<p>NYSERDA’s ASHP and GSHP Incentive programs closed to new applications on March 31, 2020.</p> <p>Contracting for the recent round of Clean Heating and Cooling Community Campaigns is just about completed. This continues to grow the HeatSmart activity in New York State, including awards focused on LMI activities in several communities. Efforts are increasing to capture all clean energy technology installation and energy savings within the communities.</p> <p>High savings committed through the Geothermal Clean Energy Challenge have been projected, although follow up with NYPA indicates that the number of large campus installations will be lower than projected. High-level screenings of these projects have been completed and will be used to update the projected savings estimates in Q1 2021.</p>
	21%			

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO <sub>2</sub> e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO <sub>2</sub> e Savings	
Product and Appliance Standards	10%	n/a	n/a	Research and engagement in this area continues, although actual progress on carbon reduction is dependent on statutory changes and promulgation of standards.
	10%			

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO <sub>2</sub> e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO <sub>2</sub> e Savings	
Industrial Transition	12%	96%	95%	The initiative concluded accepting new applications in December 2019. Current energy efficiency and process improvement projects continue to provide carbon savings and are progressing toward installation over the next four years. Utilities now offer financial support for similar 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 account 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 of benefit progress through the current reporting period concludes this overview—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 Dec 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	\$2,173,040,636	91%	\$554,113,162	\$503,649,503	\$1,057,762,664	48%	\$1,132,792,031
NYS Cost Recovery Fee		\$25,156,095		\$7,642,036	-	\$7,642,036		
<b>Innovation &amp; Research</b>								
Program Funds	\$631,672,000	\$383,602,662	61%	\$92,886,336	\$125,800,330	\$218,686,666	57%	\$168,379,147
NYS Cost Recovery Fee		\$4,641,743		\$1,178,591	-	\$1,178,591		
<b>Administration</b>	\$274,400,000	\$231,485,109	84%	\$115,401,661	\$242,797	\$115,644,458	50%	\$115,840,651
<b>Evaluation</b>	\$130,200,000	\$76,852,829	59%	\$8,479,369	\$12,185,826	\$20,665,195	27%	\$56,187,634
<b>Total</b>	<b>\$3,430,000,000</b>	<b>\$2,894,779,074</b>	<b>84%</b>	<b>\$779,701,156</b>	<b>\$641,878,456</b>	<b>\$1,421,579,611</b>	<b>49%</b>	<b>\$1,473,199,463</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 NYSERDA's board in January 2019.

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

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

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

<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 Funds 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—Budgets and Spending**

See endnote section for more information.

Initiative	Budget Approved as of Dec 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	\$3,595,586	\$2,500	\$3,598,086	100%	\$1,914
Anaerobic Digesters Transition	\$13,916,258	\$3,448,851	\$10,215,118	\$13,663,969	98%	\$252,289
Combined Heat & Power Transition	\$59,486,517	\$24,413,423	\$35,074,726	\$59,488,149	100%	(\$1,632)
Commercial New Construction Transition	\$24,600,762	\$6,476,274	\$11,103,269	\$17,579,543	71%	\$7,021,219
Commercial Transition	\$12,576,271	\$9,256,829	\$3,374,063	\$12,630,892	100%	(\$54,621)
Industrial Transition	\$66,004,580	\$33,766,645	\$26,080,247	\$59,846,892	91%	\$6,157,688
Low Rise New Construction Transition - Market Rate	\$4,538,388	\$3,407,193	\$1,086,013	\$4,493,206	99%	\$45,182
Multifamily Market Rate Transition	\$156,214	\$156,214	-	\$156,214	100%	-
Multifamily New Construction Transition - Market Rate	\$2,487,777	\$1,075,264	\$1,006,412	\$2,081,676	84%	\$406,102
Single Family Market Rate Transition	\$24,079,440	\$23,423,518	\$386,786	\$23,810,304	99%	\$269,136
Small Wind Transition	\$3,587,089	\$2,828,109	\$742,247	\$3,570,356	100%	\$16,733
Solar Thermal Transition	\$293,770	\$287,513	-	\$287,513	98%	\$6,257
<b>TOTAL</b>	<b>\$215,327,066</b>	<b>\$112,135,418</b>	<b>\$89,071,381</b>	<b>\$201,206,798</b>	<b>93%</b>	<b>\$14,120,268</b>

<sup>a</sup> Funds approved by DPS as of December 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 Funds 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>10,11,12</sup>

Initiative	Budget Approved as of Dec 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	\$1,509,627	\$3,490,373	\$5,000,000	100%	-
Advancing Agricultural Energy Technologies	\$3,760,000	\$171,141	\$1,898,523	\$2,069,665	55%	\$1,690,335
<b>Agriculture Chapter Total</b>	<b>\$8,760,000</b>	<b>\$1,680,769</b>	<b>\$5,388,896</b>	<b>\$7,069,665</b>	<b>81%</b>	<b>\$1,690,335</b>
<b>Clean Transportation Chapter</b>						
Electric Vehicles - Rebate	\$39,500,000	\$36,543,298	\$722,284	\$37,265,582	94%	\$2,234,418
<b>Clean Transportation Chapter Total</b>	<b>\$39,500,000</b>	<b>\$36,543,298</b>	<b>\$722,284</b>	<b>\$37,265,582</b>	<b>94%</b>	<b>\$2,234,418</b>
<b>Clean Heating and Cooling</b>						
Heat Pumps Phase 1 (2017)	\$65,776,685	\$42,422,210	\$13,903,832	\$56,326,042	86%	\$9,450,643
Heat Pumps Phase 2 (2020)	\$98,200,000	\$582,194	\$11,596,484	\$12,178,677	12%	\$86,021,323
Renewable Heat NY - Clean and Efficient Biomass Heating	\$13,487,000	\$9,738,782	\$1,351,998	\$11,090,780	82%	\$2,396,220
<b>Clean Heating and Cooling Total</b>	<b>\$177,463,685</b>	<b>\$52,743,187</b>	<b>\$26,852,313</b>	<b>\$79,595,500</b>	<b>45%</b>	<b>\$97,868,185</b>
<b>Codes Chapter</b>						
Code to Zero	\$21,000,000	\$3,192,465	\$6,464,990	\$9,657,455	46%	\$11,342,545
<b>Codes Chapter Total</b>	<b>\$21,000,000</b>	<b>\$3,192,465</b>	<b>\$6,464,990</b>	<b>\$9,657,455</b>	<b>46%</b>	<b>\$11,342,545</b>
<b>Commercial Chapter</b>						
Energy Management Technology	\$73,168,000	\$21,884,171	\$51,613,081	\$73,497,252	100%	(\$329,252)
P-12 Schools	\$21,600,000	\$2,242,836	\$4,373,562	\$6,616,398	31%	\$14,983,602
Real Estate Tenant	\$25,499,999	\$9,041,539	\$6,134,830	\$15,176,369	60%	\$10,323,630
REV Campus Challenge	\$21,650,002	\$4,641,070	\$11,466,503	\$16,107,574	74%	\$5,542,428
<b>Commercial Chapter Total</b>	<b>\$141,918,001</b>	<b>\$37,809,616</b>	<b>\$73,587,976</b>	<b>\$111,397,592</b>	<b>78%</b>	<b>\$30,520,409</b>
<b>Communities Chapter</b>						
Clean Energy Communities	\$81,271,963	\$12,570,881	\$10,261,727	\$22,832,608	28%	\$58,439,355
Community Energy Engagement	\$4,407,818	\$3,312,347	\$937,961	\$4,250,308	96%	\$157,510
<b>Communities Chapter Total</b>	<b>\$85,679,781</b>	<b>\$15,883,228</b>	<b>\$11,199,689</b>	<b>\$27,082,916</b>	<b>32%</b>	<b>\$58,596,865</b>
<b>Energy Storage Chapter</b>						
Reducing Barriers to Distributed Deployment	\$24,450,000	\$8,728,397	\$2,580,743	\$11,309,139	46%	\$13,140,861
Solar Plus Energy Storage	\$40,000,000	-	\$39,968,693	\$39,968,693	100%	\$31,307
<b>Energy Storage Chapter Total</b>	<b>\$64,450,000</b>	<b>\$8,728,397</b>	<b>\$42,549,436</b>	<b>\$51,277,833</b>	<b>80%</b>	<b>\$13,172,167</b>
<b>Industrial Chapter</b>						
Energy Management Practices	\$28,876,778	\$7,448,652	\$4,026,642	\$11,475,294	40%	\$17,401,484
<b>Industrial Chapter Total</b>	<b>\$28,876,778</b>	<b>\$7,448,652</b>	<b>\$4,026,642</b>	<b>\$11,475,294</b>	<b>40%</b>	<b>\$17,401,484</b>

Table 7 continued

Initiative	Budget Approved as of Dec 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	\$4,918,436	\$71,615	\$4,990,051	100%	\$9,949
Offshore Wind Pre-Development Activities	\$10,000,000	\$7,636,242	\$2,284,937	\$9,921,179	99%	\$78,821
ORES Support	\$9,000,000	\$667,646	\$2,155,711	\$2,823,358	31%	\$6,176,642
<b>Large-Scale Renewables Chapter Total</b>	<b>\$24,000,000</b>	<b>\$13,222,324</b>	<b>\$4,512,264</b>	<b>\$17,734,588</b>	<b>74%</b>	<b>\$6,265,412</b>
<b>Low- to Moderate-Income Chapter</b>						
Healthy Homes Feasibility Study	\$212,147	\$177,126	\$35,021	\$212,147	100%	-
LMI Multifamily	\$128,808,112	\$12,595,867	\$23,481,598	\$36,077,465	28%	\$92,730,647
LMI Pilots	\$2,443,532	-	-	-	0%	\$2,443,532
Low-Income Forum on Energy	\$44,467,401	\$405,619	\$447,822	\$853,441	2%	\$43,613,960
Low Rise New Construction Transition - LMI	\$8,487,000	\$5,218,568	\$3,213,946	\$8,432,514	99%	\$54,486
Multifamily New Construction Transition - LMI	\$10,879,000	\$2,686,413	\$7,369,113	\$10,055,525	92%	\$823,475
New Construction - LMI	\$138,831,361	\$2,832,799	\$41,004,591	\$43,837,390	32%	\$94,993,971
NYS Healthy Homes Value Based Payment Pilot	\$9,791,293	\$922,490	\$2,218,612	\$3,141,102	32%	\$6,650,191
RetrofitNY - LMI	\$30,503,500	\$3,075,469	\$1,307,524	\$4,382,993	14%	\$26,120,507
REvitalize	\$310,924	\$291,508	\$19,500	\$311,008	100%	(\$84)
Single Family - Low Income	\$235,627,453	\$132,148,514	\$5,731,530	\$137,880,045	59%	\$97,747,409
Single Family - Moderate Income	\$89,751,836	\$49,744,330	\$3,210,145	\$52,954,475	59%	\$36,797,361
Solar For All	\$21,218,418	\$2,581,005	\$10,113,816	\$12,694,821	60%	\$8,523,597
<b>Low- to Moderate-Income Chapter Total</b>	<b>\$721,331,977</b>	<b>\$212,679,707</b>	<b>\$98,153,218</b>	<b>\$310,832,926</b>	<b>43%</b>	<b>\$410,499,052</b>
<b>Multifamily Chapter</b>						
Multifamily	\$37,138,016	\$17,068	\$320,657	\$337,725	1%	\$36,800,291
<b>Multifamily Chapter Total</b>	<b>\$37,138,016</b>	<b>\$17,068</b>	<b>\$320,657</b>	<b>\$337,725</b>	<b>1%</b>	<b>\$36,800,291</b>
<b>Multi-Sector Solutions Chapter</b>						
Clean Energy Siting and Soft Cost Reduction	\$8,795,000	\$1,016,757	\$1,362,567	\$2,379,323	27%	\$6,415,677
Consumer Awareness	\$2,803,610	\$937,156	\$1,866,454	\$2,803,610	100%	-
Information Products and Brokering	\$8,500,000	\$637,841	\$801,545	\$1,439,386	17%	\$7,060,614
Market Challenges	\$105,222,650	\$5,628,762	\$17,795,133	\$23,423,895	22%	\$81,798,755
Pay for Performance	\$55,756,709	\$1,411,348	\$10,698,069	\$12,109,417	22%	\$43,647,292
Technical Services	\$62,097,185	\$6,557,193	\$28,855,591	\$35,412,784	57%	\$26,684,401
<b>Multi-Sector Solutions Chapter Total</b>	<b>\$243,175,154</b>	<b>\$16,189,057</b>	<b>\$61,379,359</b>	<b>\$77,568,416</b>	<b>32%</b>	<b>\$165,606,738</b>
<b>New Construction Chapter</b>						
New Construction - Market Rate	\$131,029,194	\$5,420,211	\$41,394,093	\$46,814,304	36%	\$84,214,890
<b>New Construction Chapter Total</b>	<b>\$131,029,194</b>	<b>\$5,420,211</b>	<b>\$41,394,093</b>	<b>\$46,814,304</b>	<b>36%</b>	<b>\$84,214,890</b>
<b>On-Site Power Chapter</b>						
Fuel Cells	\$11,310,030	\$937,849	\$9,680,625	\$10,618,474	94%	\$691,556
<b>On-Site Power Chapter Total</b>	<b>\$11,310,030</b>	<b>\$937,849</b>	<b>\$9,680,625</b>	<b>\$10,618,474</b>	<b>94%</b>	<b>\$691,556</b>

**Table 7 continued**

Initiative	Budget Approved as of Dec 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	\$172,837	\$259,822	\$432,659	2%	\$21,266,341
<b>Product and Appliance Standards Chapter Total</b>	\$21,699,000	\$172,837	\$259,822	\$432,659	2%	\$21,266,341
<b>Residential Chapter</b>						
Residential	\$49,641,366	\$4,079,703	\$3,093,082	\$7,172,785	14%	\$42,468,581
<b>Residential Chapter Total</b>	\$49,641,366	\$4,079,703	\$3,093,082	\$7,172,785	14%	\$42,468,581
<b>REV Technical Assistance Chapter</b>						
REV Connect	\$13,000,000	\$3,281,046	\$3,435,987	\$6,717,034	52%	\$6,282,966
<b>REV Technical Assistance Chapter Total</b>	\$13,000,000	\$3,281,046	\$3,435,987	\$6,717,034	52%	\$6,282,966
<b>Workforce Development and Training Chapter</b>						
Building Operations and Maintenance Partnerships	\$33,345,000	\$5,577,677	\$7,300,594	\$12,878,270	39%	\$20,466,730
Talent Pipeline	\$75,000,000	\$6,565,086	\$7,269,328	\$13,834,414	18%	\$61,165,586
<b>Workforce Development and Training Chapter Total</b>	\$108,345,000	\$12,142,763	\$14,569,922	\$26,712,684	25%	\$81,632,316
<b>Market Characterization &amp; Design Market Development</b>	\$29,395,589	\$9,805,570	\$6,986,866	\$16,792,435	57%	\$12,603,153
<b>NYS Cost Recovery Fee Market Development</b>	\$25,156,095	\$7,642,036	-	\$7,642,036	30%	\$17,514,059
<b>Total Market Development</b>	\$1,982,869,666	\$449,619,780	\$414,578,122	\$864,197,902	44%	\$1,118,671,763

\* Totals may not sum exactly due to rounding.

<sup>a</sup> Funds approved by DPS as of December 31, 2020.

<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 Funds and Committed Funds.

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

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

## 4 Innovation and Research Initiative Specific Results

**Table 8. Innovation and Research Initiative—Budgets and Spending**

See endnote section for more information.<sup>13,14</sup>

Initiative	Budget Approved as of Dec 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	\$3,756,323	\$9,843,509	\$13,599,832	45%	\$16,400,168
<b>Building Innovation Chapter Total</b>	\$30,000,000	\$3,756,323	\$9,843,509	\$13,599,832	45%	\$16,400,168
<b>Clean Transportation Chapter</b>						
Electric Vehicles - Innovation	\$11,850,000	\$3,313,535	\$6,214,945	\$9,528,480	80%	\$2,321,520
Public Transportation and Electrified Rail	\$18,500,000	\$2,025,878	\$8,105,261	\$10,131,139	55%	\$8,368,861
<b>Clean Transportation Chapter Total</b>	\$30,350,000	\$5,339,413	\$14,320,206	\$19,659,619	65%	\$10,690,381
<b>Energy-Related Environmental Research Chapter</b>						
Energy-Related Environmental Research	\$37,800,000	\$12,452,071	\$12,602,779	\$25,054,850	66%	\$12,745,150
<b>Energy-Related Environmental Research Chapter Total</b>	\$37,800,000	\$12,452,071	\$12,602,779	\$25,054,850	66%	\$12,745,150
<b>Grid Modernization Chapter</b>						
High Performing Electric Grid	\$116,800,000	\$17,459,927	\$34,880,522	\$52,340,448	45%	\$64,459,552
Power Electronics Manufacturing Consortium	\$16,700,000	\$16,694,490	-	\$16,694,490	100%	-
<b>Grid Modernization Chapter Total</b>	\$133,500,000	\$34,154,417	\$34,880,522	\$69,034,938	52%	\$64,465,062
<b>Innovation Capacity and Business Development Chapter</b>						
CleanTech Startup Growth	\$67,602,009	\$20,832,469	\$31,504,807	\$52,337,275	77%	\$15,264,733
Manufacturing Corps	\$12,000,000	\$5,411,293	\$4,297,000	\$9,708,293	81%	\$2,291,707
Novel Business Models and Offerings	\$16,100,000	\$3,144,533	\$3,039,851	\$6,184,384	38%	\$9,915,616
<b>Innovation Capacity and Business Development Chapter Total</b>	\$95,702,009	\$29,388,295	\$38,841,657	\$68,229,952	71%	\$27,472,057
<b>Renewables Optimization Chapter</b>						
Energy Storage Technology and Product Development	\$33,000,000	\$4,808,326	\$5,385,868	\$10,194,194	31%	\$22,805,806
National Offshore Wind Research & Development Consortium	\$22,500,000	\$2,814,283	\$9,458,345	\$12,272,628	55%	\$10,227,372
<b>Renewables Optimization Chapter Total</b>	\$55,500,000	\$7,622,609	\$14,844,213	\$22,466,822	40%	\$33,033,178
<b>Market Characterization &amp; Design Innovation &amp; Research</b>	\$750,653	\$173,208	\$467,445	\$640,653	85%	\$110,000
<b>NYS Cost Recovery Fee Innovation &amp; Research</b>	\$4,641,743	\$1,178,591	-	\$1,178,591	25%	\$3,463,152
<b>Total Innovation and Research</b>	\$388,244,405	\$94,064,927	\$125,800,330	\$219,865,257	57%	\$168,379,147

Table notes are on the next page

- \* Totals may not sum exactly due to rounding.
- a Funds approved by DPS as of December 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 Funds 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>15</sup>

Initiative	Completed Projects through Sept 30, 2020 with Adjustments	Completed Projects through Oct 1, 2020 through Dec 31, 2020	Total Completed Projects through Dec 31, 2020	Current Pipeline through Dec 31, 2020 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Direct Planned Benefits through Q4 2020	% of Cumulative Annual Direct Planned Benefits through Q4 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)	958,380	71,901	1,030,281	1,859,830	2,890,111	3,028,601	95%	4,566,406	63%
Energy Efficiency (MMBtu)	9,605,309	643,855	10,249,163	7,109,756	17,358,919	18,867,270	92%	31,933,676	54%
Energy Efficiency (MW)	32	3	35	98	133	92	144%	93	143%
Renewable Energy (MWh)	247,095	80	247,175	65,410	312,585	601,130	52%	1,766,458	18%
Renewable Energy (MW)	306	0	306	3	309	478	65%	1,378	22%
CO2e Reductions (metric tons)	1,422,851	71,566	1,494,416	1,196,598	2,691,014	2,972,930	91%	5,038,607	53%
Customer Bill Savings (\$ million)	\$246.68	\$19.04	\$265.72	\$313.28	\$579.00	\$626.10	92%	\$1,088.66	53%
Leveraged Funds (\$ million)	\$1,736.27	\$160.81	\$1,897.08	\$1,949.95	\$3,847.03	\$4,025.41	96%	\$5,965.59	64%
<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)	\$496.79	\$2.59	\$499.38	\$651.52	\$1,150.90	\$1,256.99	92%	\$1,769.64	65%
<b>Total Energy Efficiency (MWh)</b>	<b>958,380</b>	<b>71,901</b>	<b>1,030,281</b>	<b>1,859,830</b>	<b>2,890,111</b>	<b>3,028,601</b>	<b>95%</b>	<b>4,566,406</b>	<b>63%</b>
<b>Total Energy Efficiency (MMBtu)</b>	<b>9,605,309</b>	<b>643,855</b>	<b>10,249,163</b>	<b>7,109,756</b>	<b>17,358,919</b>	<b>18,867,270</b>	<b>92%</b>	<b>31,933,676</b>	<b>54%</b>
<b>Total Energy Efficiency (MW)</b>	<b>32</b>	<b>3</b>	<b>35</b>	<b>98</b>	<b>133</b>	<b>92</b>	<b>144%</b>	<b>93</b>	<b>143%</b>
<b>Total Renewable Energy (MWh)</b>	<b>247,095</b>	<b>80</b>	<b>247,175</b>	<b>65,410</b>	<b>312,585</b>	<b>601,130</b>	<b>52%</b>	<b>1,766,458</b>	<b>18%</b>
<b>Total Renewable Energy (MW)</b>	<b>306</b>	<b>0</b>	<b>306</b>	<b>3</b>	<b>309</b>	<b>478</b>	<b>65%</b>	<b>1,378</b>	<b>22%</b>
<b>Total CO2e Reductions (metric tons)</b>	<b>1,422,851</b>	<b>71,566</b>	<b>1,494,416</b>	<b>1,196,598</b>	<b>2,691,014</b>	<b>2,972,930</b>	<b>91%</b>	<b>5,038,607</b>	<b>53%</b>
<b>Total Customer Bill Savings (\$ million)</b>	<b>\$246.68</b>	<b>\$19.04</b>	<b>\$265.72</b>	<b>\$313.28</b>	<b>\$579.00</b>	<b>\$626.10</b>	<b>92%</b>	<b>\$1,088.66</b>	<b>53%</b>
<b>Total Leveraged Funds (\$ million)</b>	<b>\$2,233.07</b>	<b>\$163.40</b>	<b>\$2,396.46</b>	<b>\$2,601.47</b>	<b>\$4,997.93</b>	<b>\$5,282.40</b>	<b>95%</b>	<b>\$7,735.23</b>	<b>65%</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 Sept 30, 2020 with Adjustments	Completed Projects through Oct 1, 2020 - Dec 31, 2020	Total Completed Projects through Dec 31, 2020	Current Pipeline through Dec 31, 2020 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Lifetime Direct Planned Benefits through Q4 2020	% of Cumulative Lifetime Direct Planned Benefits through Q4 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)	13,319,865	1,163,337	14,483,201	25,239,516	39,722,718	41,148,872	97%	62,134,057	64%
Energy Efficiency (MMBtu)	145,332,144	10,167,459	155,499,603	98,542,113	254,041,716	277,662,808	91%	483,936,532	52%
Renewable Energy (MWh)	1,728,209	1,462	1,729,672	720,876	2,450,548	4,694,479	52%	12,623,189	19%
CO2e Reductions (metric tons)	19,853,032	1,209,091	21,062,123	15,282,416	36,344,539	39,090,313	93%	64,880,475	56%
Customer Bill Savings (\$ million)	\$3,239.91	\$299.87	\$3,539.78	\$4,157.30	\$7,697.09	\$8,103.20	95%	\$13,745.97	56%
Leveraged Funds (\$ million)	\$1,736.27	\$160.81	\$1,897.08	\$1,949.95	\$3,847.03	\$4,025.41	96%	\$5,965.59	64%
<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)	\$496.79	\$2.59	\$499.38	\$651.52	\$1,150.90	\$1,256.99	92%	\$1,769.64	65%
<b>Total Energy Efficiency (MWh)</b>	<b>13,319,865</b>	<b>1,163,337</b>	<b>14,483,201</b>	<b>25,239,516</b>	<b>39,722,718</b>	<b>41,148,872</b>	<b>97%</b>	<b>62,134,057</b>	<b>64%</b>
<b>Total Energy Efficiency (MMBtu)</b>	<b>145,332,144</b>	<b>10,167,459</b>	<b>155,499,603</b>	<b>98,542,113</b>	<b>254,041,716</b>	<b>277,662,808</b>	<b>91%</b>	<b>483,936,532</b>	<b>52%</b>
<b>Total Renewable Energy (MWh)</b>	<b>1,728,209</b>	<b>1,462</b>	<b>1,729,672</b>	<b>720,876</b>	<b>2,450,548</b>	<b>4,694,479</b>	<b>52%</b>	<b>12,623,189</b>	<b>19%</b>
<b>Total CO2e Reductions (metric tons)</b>	<b>19,853,032</b>	<b>1,209,091</b>	<b>21,062,123</b>	<b>15,282,416</b>	<b>36,344,539</b>	<b>39,090,313</b>	<b>93%</b>	<b>64,880,475</b>	<b>56%</b>
<b>Total Customer Bill Savings (\$ million)</b>	<b>\$3,239.91</b>	<b>\$299.87</b>	<b>\$3,539.78</b>	<b>\$4,157.30</b>	<b>\$7,697.09</b>	<b>8,103</b>	<b>95%</b>	<b>13,746</b>	<b>56%</b>
<b>Total Leveraged Funds (\$ million)</b>	<b>\$2,233.07</b>	<b>\$163.40</b>	<b>\$2,396.46</b>	<b>\$2,601.47</b>	<b>\$4,997.93</b>	<b>\$5,282.40</b>	<b>95%</b>	<b>\$7,735.23</b>	<b>65%</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.	Mini bid was issued in Q4 2020 and awards are expected in Q1 2021.
	2020	Issue awards from pilot #2 Stretch to Zero assistance solicitation.	Voice of customer work to inform solicitation design will be completed Q1 2021. The solicitation will be issued Q2 2021 and awards made Q3 2021.
	2020	Contract for development of NY Stretch-Energy (IECC2021).	Mini-bid is under development and will be issued Q1 2021.
	2020	Issue awards from RFI for Technical input to NYStretch 2022.	The RFI was released in Q4 2020, responses due Q1 2021.

### Near-Term Milestones for Energy Management Technology

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	NYSERDA issues a challenge to entrepreneurs and innovators to explore RTEM data sets to advance efforts at demand reduction and peak load shaping.	NYSERDA is supporting a PropTech challenge for entrepreneurs and innovators to explore granular data on office tenant energy consumption and will propose solutions.
	2020	NYSERDA makes publicly available anonymized RTEM project data to support market confidence in performance of RTEM systems and services.	NYSERDA is on track to achieve this milestone by end of Q2 2021. Significant progress has been made standardizing data provided by the 40+ vendors active in the RTEM program, including rollout of a central data repository.

### 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 has launched a long-term effort to educate and train key stakeholders on energy-efficient tenant spaces.

**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	Release RFP for commercial SEM Energy Coach.	This RFP will be released in Q1 2021—delayed due to COVID-19.
	2020	Release RFP for Energy Coach for additional industrial cohorts.	The RFP for a new Energy Coach for industrial will be combined with the RFP for commercial. This RFP will be released in Q1 2021—delayed due to COVID-19. However, the Energy Coach will support SEM On Demand. It is not anticipated that NYSERDA will continue the cohort model due to budget changes and COVID-19 impacts.

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

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Issue awards from release of Soft-Cost Innovation solicitation.	The Soft-Cost Innovation solicitation NYSERDA planned to launch in 2020 has been replaced to incorporate expertise available in NYSERDA’s existing contractor pools through mini-bids. Those mini-bids may be augmented by a solicitation if there are gaps in relevant areas of expertise among existing prequalified contractors. Mini-bids and, if necessary, an accompanying solicitation are expected to be released in Q1 2021, with contractors awarded in Q2 2021.

**Near-Term Milestones for Consumer Awareness**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
✓	2020	Measure/analyze assets, adjust to optimize campaign performance.	Optimization opportunities were reviewed daily and an extensive report is being assembled to drive initial media selections when the spring 2021 effort begins.

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

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
✓	2020	Asset Data Matching pilots and DER pilot platform testing completed with recommendations.	The final reports are under review and relevant data will be published on Open NY in Q1 2021.
✓	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 focusing on tenant energy management. The competition launched in November 2020 and winners are expected to be announced by March 2021.

**Near-Term Milestones for Market Challenges**

Empire Building Challenge

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Announce the participating real estate owners and their public commitments from round 1 of solicitation.	The solicitation was launched in Q3 2020, and we are in the process of contracting with our selected Empire Business Challenge Partners. Public announcement will be made in Q1 2021.
	2020	Publish preliminary results from global scan of low-carbon technologies and publish market data that provides OEMs and other solution providers better visibility into New York State retrofit market needs and opportunities.	The global low-carbon technologies scan was completed in 2020; results have been presented to real estate industry as well as networks of global solution providers.

**Near-Term Milestones for Multifamily**

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Publish low-carbon playbooks for five prevalent multifamily building typologies.	NYSERDA is finalizing drafts of these five playbooks and is actively working to publish them in early 2021.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Launch commercial sector pilot.	The commercial sector pilot will launch in Q1 2021.

**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 were due in May 2020. Awards are expected to be announced in Q1 2021.
	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 was anticipated to be released as part of round 10 of the Consolidated Funding Application (CFA). The CFA was delayed due to the COVID-19 State of Emergency, and a new timeline has yet to be released.

**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.	Heat Pump Case Studies are now available at <a href="https://www.nyscrda.ny.gov/Researchers-and-Policymakers/Clean-Heating-and-Cooling">https://www.nyscrda.ny.gov/Researchers-and-Policymakers/Clean-Heating-and-Cooling</a>

**Near-Term Milestones Heat Pumps Phase 2, 2020**

Complete	Time Frame	Milestone	Explanation of Progress
✓			
	2020	Launch focused marketing campaign to support the residential Comfort Home initiative.	Comfort Home Marketing is planned to launch as part of the Life Moments campaign slated for February 2021.
	2020	Launch co-branded utility marketing campaign within one or more electric utility territories.	The statewide campaign is expected to launch at the end of Q1 2021.
	2020	Launch final round of Phase 1 Community Campaigns.	Contracting is in process and the annual kick-off meeting with all participating campaign teams was held in December 2020. All round 3 (PON 4114) campaign teams will launch their first campaigns by Q1 2021.
	2020	Receive and review submittals from RFI seeking input on LMI electrification demonstration/competition categories.	This RFI is under consideration. Its direction will be informed by research currently underway, initial pilot learnings and continued stakeholder engagement.
✓	2020	Initial LMI incentives (supplemental to utility incentives) are made available.	The incentives pilot launched in December 2020.
	2020	Publish the Building Electrification Roadmap.	It is expected that the roadmap will be published by Q3 2021.

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

Complete	Time Frame	Milestone	Explanation of Progress
✓			
	2020	Initial in-field market tests enter the market.	The issuance of the market test PON was delayed so in-field market tests have not yet entered the market. This milestone likely will be completed in Q2 2021.

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

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
✓	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 more than 30 such locations in NYS. NYSEERDA launched a new solicitation supporting direct current fast charging development in Q4 2020, which will expand charging options in Upstate New York.

**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 total of 46 contracts were executed by NYSEERDA in 2020 from solicitations and other procurement processes.

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

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
✓	2020	Issue awards following release of solicitation #6.	Awards were issued in Q4 2020.

**Near-Term Milestones for Cleantech Start-Up Growth Geographic Coverage**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Entrepreneurship training programs established.	Awards have been made and contracts are expected to be signed in Q2 2021.

**Near-Term Milestones for Cleantech Start-Up Growth COVID-19 Response Program**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	External Investment Committee (EIC) established.	EIC members have been invited and many have confirmed. NYSERDA will be finalizing the list by Q1 2021.
	2020	Issue awards from solicitation.	Awards are expected by Q3 2021. The first round of applicants has been accepted and there will be a second due date on April 14, 2021.

**Near-Term Milestones for Cleantech Start-Up Growth Incubators**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
n/a	2020	Begin eight new demonstration projects.	This milestone is no longer applicable and will be revised in future investment plan filings.

**Near-Term Milestones for Cleantech Start-Up Growth Innovation Advisors**

<b>Complete</b> ✓	<b>Time Frame</b>	<b>Milestone</b>	<b>Explanation of Progress</b>
	2020	Issuance of awards from solicitation.	Solicitation launched and applications received. Awards are expected to be issued in Q2 2021.

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

Advancing Agricultural Energy Technologies  
Building Operations and Maintenance Partnerships (formerly Workforce Development Industry Partnerships)  
Clean Energy Communities  
Cleantech Start-Up Growth (76 West)  
Cleantech Start-Up Growth (Entrepreneurs-In-Residence)  
Cleantech Start-Up Growth (ICC Engagement)  
Cleantech Start-Up Growth (Proof-of-Concept Centers)  
Community Energy Engagement  
Electric Vehicles—Rebate  
Energy Storage Technology and Product Development  
Fuel Cells (Inactive)  
Greenhouse Lighting and Systems Engineering (GLASE)  
Manufacturing Corps  
National Offshore Wind Research and Development Consortium  
NextGen HVAC

Novel Business Models and Offerings  
Offshore Wind Master Plan  
Offshore Wind Pre-Development Activities  
On-Site Energy Manager  
P-12 Schools  
Power Electronics Manufacturing Consortium  
Product and Appliance Standards (formerly Underutilized Product Support)  
Public Transportation and Electrified Rail  
Reducing Barriers to Deploying Distributed Energy Storage  
Renewable Heat NY—Clean and Efficient Biomass Heating  
Residential (formerly Engaging New Markets)  
REV Campus Challenge  
Talent Pipeline  
Technical Services



# Endnotes

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- 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. [nyserdera.ny.gov/About/Publications/New-Efficiency](http://nyserdera.ny.gov/About/Publications/New-Efficiency).
- 5 The May 2020 NY-Sun Expansion Order approved a total requested budget of \$573 million to expand the capacity target from 3 GW by 2023 to 6 GW by 2025. The Commission ordered that the initial \$230 million in funds to support the expansion were authorized to be committed and expended. Order Extending and Expanding Distributed Solar Incentives, May 14, 2020, available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={A67E946F-40B0-49C4-93CD-7BC454987CDF}>. This graph is not yet updated with new budget/goal.
- 6 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 ([nyserdera.ny.gov/About/Publications/EA-Reports-and-Studies/Energy-Statistics](http://nyserdera.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))
- 7 Customer Bill Savings are calculated as direct energy bill savings realized by customers participating in NYSERDA's programs.
- 8 July 24, 2020 filing, Case 18-M-0084, Case 14-M-0094.
- 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 \$151.4 million or 59.4% of the total approved budget to date, would be included with total NYSERDA commitments.
- 10 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development Initiative Research and Spending table, an additional \$55,509,375 50.4% of the total approved budget to date, would be included with total NYSERDA commitments.
- 11 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 12 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.
- 13 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 \$95,193,820 or 77.8% of the total approved budget to date, would be included with total NYSERDA commitments.
- 14 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 15 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.

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