

Clean Energy Fund Quarterly Performance Report through June 30, 2019

Final Report | August 2019

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 June 30, 2019

Final Report

Prepared by:

New York State Energy Research and Development Authority

Albany, NY

August 2019

About This Report

The Clean Energy Fund (CEF) Order was issued on January 21, 2016.¹ 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, NYSERDA will file a scorecard with the Public Service Commission containing metrics for each investment plan. This data fulfills part of the ordered reporting requirements and will be featured in the public NY Clean Energy Dashboard in early 2019, 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 and 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 June 30, 2019 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.²

The report reflects planned and achieved direct benefits from participation in NYSERDA's programs through June 30, 2019. 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.

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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 goals. As previous commission actions have already advanced, energy efficiency is a cornerstone of New York State's strategies to promote clean energy solutions for consumers while addressing climate change. The recommendations in the comprehensive energy efficiency initiative white paper, issued by the Department of Public Service (DPS) and NYSERDA on April 26, 2018, are guided by a new 2025 energy efficiency target of 185 TBtu of cumulative annual site energy savings that was later defined in a December 13, 2019 Public Service Commission order.³ 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.⁴

Governor Cuomo announced New York's Green New Deal on January 15, 2019, which is the most aggressive climate change program in the nation and puts the state on a path to being entirely carbon-neutral across all sectors of the economy, including power generation, transportation, buildings, industry and agriculture. The Climate Leadership and Community Protection Act (CLCPA) has adopted the primary clean energy goals of the Green New Deal and has set the State target to reduce GHG emissions from all anthropogenic sources 85% below 1990 levels by the year 2050, including an interim target of a zero-carbon emissions electricity sector by the year 2040. The CLCPA mandates the following:

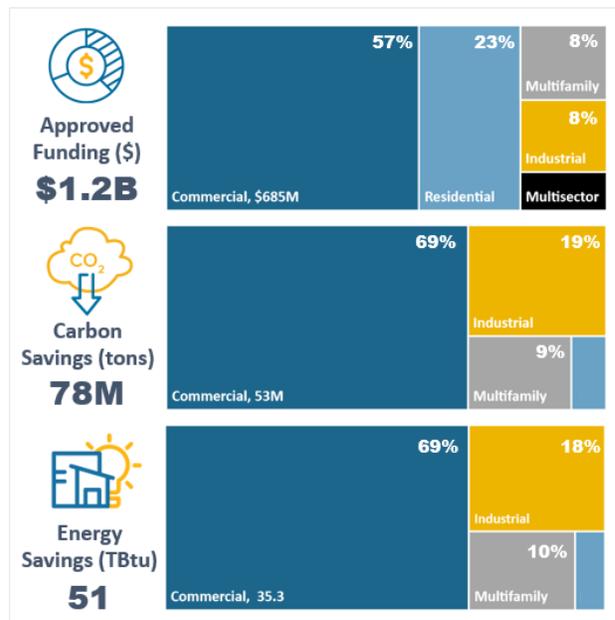
- Six thousand MW of solar by 2025
- Seventy percent renewable electricity by 2030
- Nine thousand MW of offshore wind by 2035
- Carbon-free electricity by 2040

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 emphasize investments in energy efficiency, and report that NYSERDA will be investing close to \$2 billion in funding over the CEF’s 10-year life span to support energy efficiency, delivering a minimum of 10.6 million megawatt-hours (MWh) in electric savings and 13.4 million MMBtu in non-electric fuel savings. NYSERDA’s approved investment plans as of June 30, 2019 comprise more than \$1.2 billion of investment in energy efficiency across the commercial, residential/multifamily, and industrial sectors. These approved investments in energy efficiency are expected to drive approximately 80 million metric tons of carbon dioxide equivalent (CO₂e) 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 Jun. 2019.



Through the Market Development portfolio, NYSERDA will drive actions to develop a more robust and value-creating market for energy efficiency, with particular attention to reducing energy efficiency retrofit and new construction costs, accelerating innovative solutions that drive deeper energy retrofits, and 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
- Provide more value to the customer while reducing ratepayer collections

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 June 30, 2019.

Figure 1. CEF Portfolio Expected Investment and Benefits

Toward 10-year minimum goals as of June 30, 2019 (millions).⁵

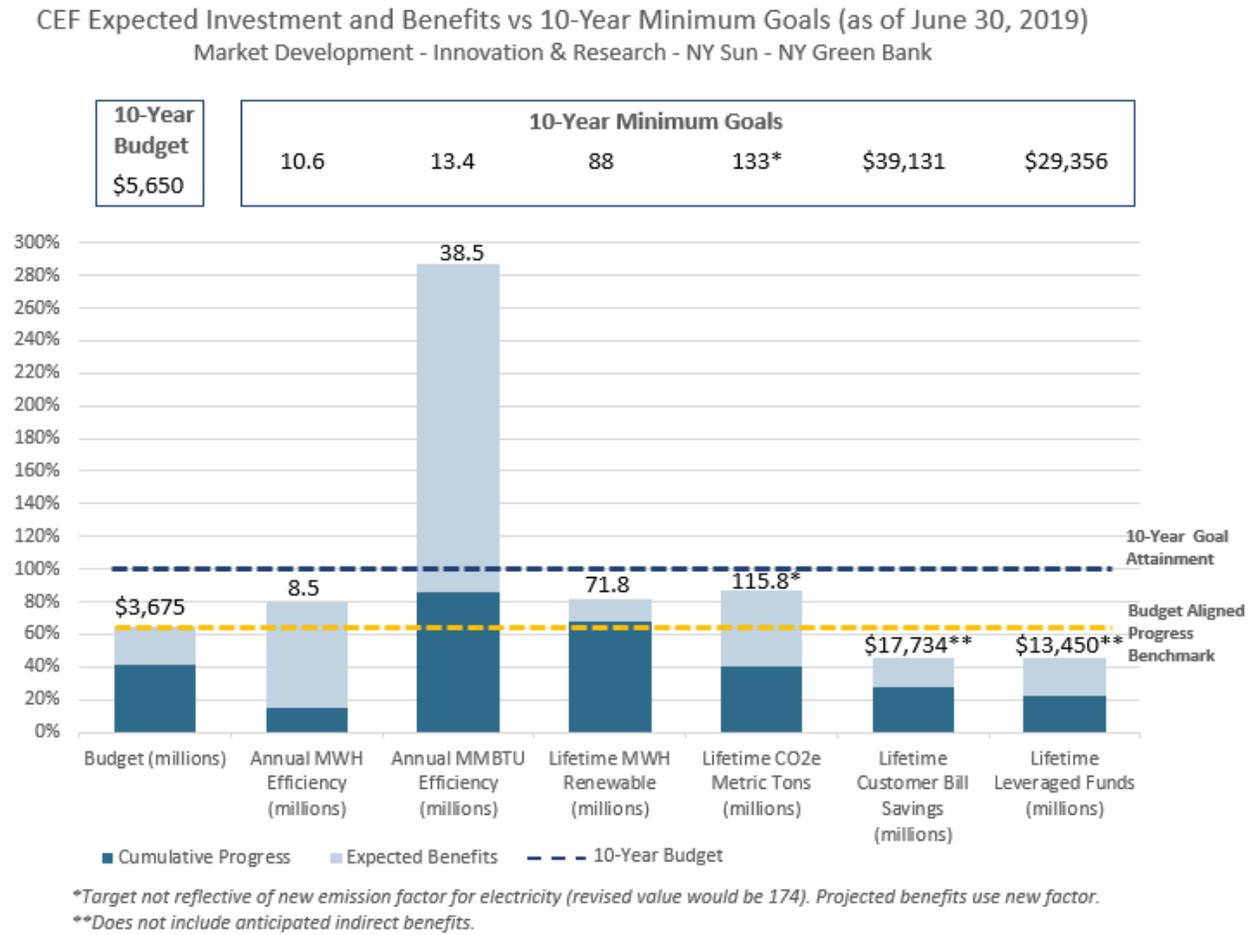


Figure 1 illustrates that deployment of funds is well-aligned with energy and carbon KPI progress at this time.⁶ Here, “Cumulative Progress” (committed budgets and benefits) is combined with “Expected Benefits” (approved but not yet committed budgets and benefits) to demonstrate total progress toward NYSERDA’s targets.

Progress remains on track toward “no backsliding from EEPS” energy efficiency MWh and MMBtu targeted goals, with MMBtu expected benefits already significantly greater than the minimum projected benefits. Carbon dioxide equivalent (CO₂e) emission reduction progress is on track to meet the overall goal for the CEF.⁷

Performance appears low at this time for metrics relating to the customer (participant) bill savings⁸ and lifetime leveraged funds because they 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 MD and I&R Portfolios

Through June 2019, 66 MD and I&R initiatives were developed by NYSERDA and filed with the Public Service Commission, of which 62 initiatives are considered active, engaging the marketplace. Following the release of the CEF Order, NYSERDA introduced 40 new initiatives, pivoting the organization's focus toward a market transformation model. These new initiatives operate 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 that may be based on more traditional NYSERDA and utility approaches. As previously noted, energy efficiency strategies serve as the foundation for the CEF, encompassing the majority of initiatives that will achieve energy and carbon targets.

Collectively, NYSERDA's management of this portfolio is similar to that of a financial advisor managing a stock 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.

Performance to Plan

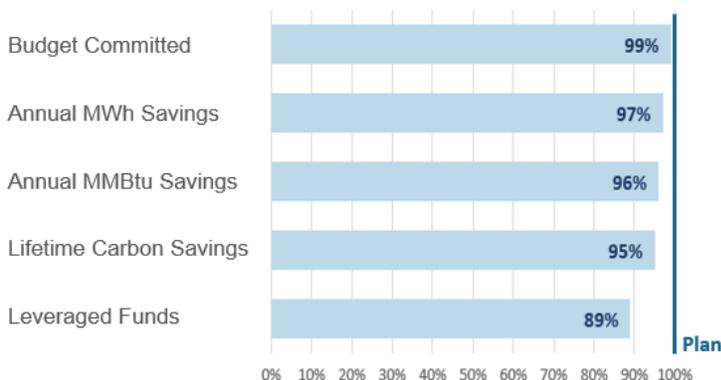
NYSERDA closely monitors MD and I&R portfolio performance, specifically measuring each initiative against its investment plan forecast of benefits over time. NYSERDA's planned benefits through Q2 2019 are defined as 100% of the 2016, 2017, and 2018 annual planned benefits plus 50% of 2019. However, it is important to note that actual progress may not be equal each quarter of a calendar year. Furthermore, especially 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 implemented a comprehensive annual review of all CEF portfolio program 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 following figure is a high-level view of NYSERDA’s MD and I&R portfolio performance to plan. Broadly speaking, the portfolio is in good standing when assessing progress through the first half of 2019 against the plan for the year. Specifically, the majority of initiatives are in the market and considered performers. In addition, nearly half of the programs reported as monitoring performance last quarter have shown persistent growth and have been transitioned into the performers category.

MD and I&R Portfolio Performance-To-Plan

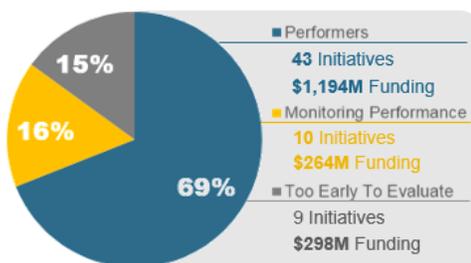
How does performance to date compare with the projected/forecasted results at this point in time?



Portfolio Initiative Performance

Categorizing the status of all active initiatives (engaging the market) within the portfolio in relationship to our planned performance to date.

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



Achieving greater impact per ratepayer dollar involves experimentation with intervention approaches with 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 Performers, Monitoring Performance, and Too Early to Evaluate is aligned with design and management expectations.

	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

Spotlight On “Top Carbon Impact” Initiatives

In NYSERDA’s MD and I&R portfolio, 15 key initiatives currently account for approximately 85% of the expected lifetime CO₂e benefits and 42% of the approved budget. These top contributors also include a very strong focus on energy efficiency, as do the majority of CEF programs.



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 CO₂e contribution within the three status categories previously introduced: Performers (Table 1), Monitoring Performance (Table 2), and Too Early to Evaluate (Table 3).

Similar to the portfolio as a whole, the composition of performance status across the top 15 programs has changed since Q4 in that more of the programs vital to NYSERDA’s ability to deliver expected benefits are making strong progress against their plan to date. Performance shown in the following tables is reflective of progress against two quarters of revised 2019 plans.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Industrial Transition	13%	108%	97%	This initiative continues to provide a strategic glide path for the marketplace to obtain carbon savings in a cost-effective manner as NYSERDA shifts emphasis to new Clean Energy Fund offerings.
Energy Management Technology	8%	81%	112%	Market interest and uptake of Real-Time Energy Management (RTEM) is very promising. Adoption rates in commercial office and multifamily buildings are strong, and there is a large pipeline of additional projects slated to join program over the second half of 2019. The RTEM projects in Commercial Real Estate and Multifamily buildings tend to be large projects that take vendors 12+ months to acquire, plus additional time for installation of systems. NYSERDA is beginning to collect data on energy savings reductions that are being achieved by these projects.
Workforce Development Industry Partnerships	7%	97%	89%	This initiative is performing well and trending positively from Q1, due in large part to increased participation by portfolio companies with multiple buildings.
Clean Energy Communities	6%	115%	91%	This initiative continues its track record of strong performance. Participation has been excellent with 280 communities completing at least four High-Impact Actions to become Clean Energy Communities. In total, 559 communities completed 1,594 High-Impact Actions. NYSERDA is in the process of developing an Investment Plan update to better serve communities interested in taking advanced action beyond the original program design.
Commercial and Industrial Carbon Challenge	6%	24%	57%	The Carbon Challenge Program is a competitive program and it was anticipated that awards would be made at the end of 2019. The reporting method of breaking down annual plans into equal quarters of expected progress will likely show the program behind pace until Q4 2019 when projects will begin to be contracted. It is anticipated that metrics will be on pace by the end of 2019 which will be monitored closely.
Continuous Energy Improvement	4%	80%	136%	NYSERDA continues industrial stakeholder engagement to build pipeline participation. Benefits are strong on Strategic Energy Management (SEM) and On-Site Energy Manager (OSEM) initiatives, with case studies under development to illustrate successful energy initiatives for dissemination to the marketplace. Energy Management Information Systems participation is lagging and NYSERDA is engaging the market to address barriers.
Technical Services	4%	178%	222%	This multisector initiative is a combination of Commercial and Agriculture efforts and it continues to make good progress against its current implementation milestones. 2019 performance to plan has been excellent thus far, but NYSERDA will continue to evaluate opportunities to refine each offering to better address marketplace needs. For example, a revised On-site Energy Manager Program is expected in Q4 2019. A new technical assistance program (FlexTech), which includes industrial and multifamily is expected in Q4 2019 as well.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Electric Vehicles - Rebate	3%	89%	90%	Since the Drive Clean Rebate launched in 2017, the market for EVs has grown sharply. However, approximately 40% of EV purchases in NYS since the program launched have not taken advantage of NYSERDA's rebates. NYSERDA recalibrated this investment plan for 2019 operation and beyond, adjusting the timeframe and market engagement plan to achieve similar impact by supporting EV sales over a longer period of time. ROI remains strong for this NYSERDA investment.
REV Campus Challenge	2%	101%	114%	The initiative is seeing good market uptake, having achieved its membership (participation) goals to date. Clean energy benefits from all member activities has started to be analyzed showing increased benefits this quarter.
P-12 Schools	2%	94%	90%	P-12 Schools launched a Benchmarking Program in April 2019 and is developing the first Gap Assistance Program to launch Fall 2019. Participation in the Benchmarking Program is on track.
Single Family - Low Income	2%	104%	85%	Consistent with previous years, the initiative is performing well and is expected to deliver its planned benefit. Carbon performance has increased from the prior quarter and is not a concern with the program's strong track record but will continue to be monitored.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
(none to report)				

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Underutilized Product Support	13%	101%	95%	Research on product and appliance standards continued in Q2 2019. The Air Source Heat Pump program is performing as expected. The Advanced Rooftop Unit program was never launched as the desired technology performance levels are not readily available in the supply chain. Alternative structures and technologies to address commercial HVAC are being investigated and NYSERDA will ultimately revise this plan. NYSERDA intends to move components of this program over to the Clean Heating and Cooling section in Q4 2019 to more effectively monitor and manage them.
RetrofitNY - LMI	7%	n/a	n/a	Six design/construction teams completed the design of high-performance retrofit solutions on six affordable housing buildings in December 2018. NYSERDA released two Program Opportunity Notices (PONs) to provide funding to support the implementation of some of these solutions. A first application was received and approved in the first quarter of 2019 and construction is expected to start for this project by the end of 2019.
New Construction - Market Rate	6%	10%	31%	This program remains in the early stages of launching critical components (Buildings of Excellence, Net Zero) and is anticipating significant progress in 2019, with that progress expected to be recorded later in the year. The reporting method of breaking down annual plans into equal quarters of expected progress will likely show the program behind pace until Q3 and Q4 2019 when projects will begin to be contracted.
Code to Zero	2%	197%	n/a	The program finalized the stretch code in Q2 2019 but is not expected to begin tracking energy benefits until 2020. Training participant progress is higher than expected as the training schedule has been accelerated due to changes in the State's energy code adoption schedule.

MD and I&R Portfolio Performance Data Tables—Budget and Benefits

Table 4 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 within Tables 5, 6, and 7 of the report. A detailed summary concludes this overview with benefits progress through June 30, 2019, both annual (Table 8) and lifetime (Table 9).

Table 4. Market Development and Innovation and Research Portfolio Level Budgets and Spending

See Endnotes section for more information⁹

Initiative	Total Budget ^a	Budget Approved as of June 30, 2019 ^b	% of Ordered Budget Funds Approved ^c	Expended Funds ^d	Committed Funds ^e	Total Progress ^f	% of Approved Budget Committed ^g	Budget Approved Remaining Balance ^h
Market Development								
Program Funds								
NYS Cost Recovery Fee	\$2,393,728,000	\$1,539,418,393	64%	\$294,092,230	\$358,817,097	\$652,909,327	42%	\$886,509,066
Innovation & Research								
Program Funds								
NYS Cost Recovery Fee	\$631,672,000	\$359,496,659	57%	\$41,383,331	\$90,590,882	\$131,974,213	37%	\$227,522,446
Administration	\$274,400,000	\$183,543,681	67%	\$79,136,287	\$88,966	\$79,225,252	43%	\$104,318,429
Evaluation	\$130,200,000	\$58,678,825	45%	\$3,362,235	\$4,492,299	\$7,854,533	13%	\$50,824,292
Total	\$3,430,000,000	\$2,141,137,558	62%	\$417,974,083	\$453,989,243	\$871,963,326	41%	\$1,269,174,232

^a 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

^b Funds approved by DPS as of June 30, 2019

^c Percentage of the approved budget

^d Invoices processed for payment by NYSERDA

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

^f Sum of Expended and Committed Funds

^g Percentage of the committed budget

^h Difference between Budget Approved Funds and Committed Funds

2 Resource Acquisition Transition Initiative Specific Progress

Table 5. Resource Acquisition Transition Initiative Level Budgets and Spending

See Endnotes section for more information¹⁰

Initiative	Budget Approved as of June 30, 2019 ^a	Expended Funds ^b	Committed Funds ^c	Total Progress ^d	% of Approved Budget Committed ^e	Budget Approved Remaining Balance ^f
Resource Acquisition Transition Chapter						
Commercial Transition	\$12,651,466	\$5,254,814	\$6,622,130	\$11,876,944	94%	\$774,522
Industrial Transition	\$68,908,453	\$18,093,635	\$40,823,424	\$58,917,059	86%	\$9,991,394
Agriculture Transition	\$3,600,000	\$3,551,591	\$36,568	\$3,588,158	100%	\$11,842
Multifamily Market Rate Transition	\$156,573	\$156,214	-	\$156,214	100%	\$359
Single Family Market Rate Transition	\$24,335,189	\$19,134,883	\$1,410,258	\$20,545,141	84%	\$3,790,048
Commercial New Construction Transition	\$30,683,999	\$3,157,646	\$19,777,680	\$22,935,327	75%	\$7,748,672
Low Rise New Construction Transition - Market Rate	\$4,837,000	\$2,377,165	\$1,911,160	\$4,288,325	89%	\$548,675
Multifamily New Construction Transition - Market Rate	\$2,734,000	\$698,740	\$1,404,901	\$2,103,641	77%	\$630,359
Anaerobic Digesters Transition	\$20,150,000	\$613,731	\$13,243,904	\$13,857,635	69%	\$6,292,365
Small Wind Transition	\$6,090,000	\$2,462,425	\$714,690	\$3,177,115	52%	\$2,912,885
Solar Thermal Transition	\$298,805	\$286,786	\$44,576	\$331,362	111%	(\$32,557)
Combined Heat & Power Transition	\$71,550,000	\$11,839,601	\$51,453,827	\$63,293,428	88%	\$8,256,572
TOTAL	\$245,995,485	\$67,627,232	\$137,443,118	\$205,070,350	83%	\$40,925,135

^a Funds approved by DPS as of June 30, 2019

^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 Expended and Committed Funds

^e Percentage of the committed budget

^f Difference between Budget Approved Funds and Committed Funds

3 Market Development Initiative Specific Results

Table 6. Market Development Initiative Budgets and Spending

See Endnotes for more information^{11, 12, 13}

Initiative	Budget Approved as of June 30, 2019 ^a	Expended Funds ^b	Committed Funds ^c	Total Progress ^d	% of Approved Budget Committed ^e	Budget Approved Remaining Balance ^f
Market Characterization & Design Market Development	\$20,650,000	\$6,388,046	\$2,601,653	\$8,989,700	44%	\$11,660,300
Commercial Chapter						
Energy Management Technology	\$66,605,000	\$6,025,170	\$17,495,064	\$23,520,234	35%	\$43,084,766
Real Estate Tenant	\$25,499,999	\$3,400,884	\$3,816,191	\$7,217,074	28%	\$18,282,925
REV Campus Challenge	\$21,650,002	\$1,801,040	\$5,473,862	\$7,274,903	34%	\$14,375,099
P-12 Schools	\$21,600,000	\$456,102	\$3,660,221	\$4,116,323	19%	\$17,483,677
Commercial Chapter Total	\$135,355,001	\$11,683,196	\$30,445,338	\$42,128,534	31%	\$93,226,467
Industrial Chapter						
Continuous Energy Improvement	\$17,539,000	\$4,195,580	\$3,167,283	\$7,362,863	42%	\$10,176,137
Industrial Chapter Total	\$17,539,000	\$4,195,580	\$3,167,283	\$7,362,863	42%	\$10,176,137
Communities Chapter						
Clean Energy Communities	\$14,218,527	\$4,340,995	\$8,567,225	\$12,908,220	91%	\$1,310,307
Community Energy Engagement	\$4,407,818	\$1,554,449	\$2,833,392	\$4,387,841	100%	\$19,977
Communities Chapter Total	\$18,626,345	\$5,895,444	\$11,400,617	\$17,296,062	93%	\$1,330,283
Large-Scale Renewables Chapter						
Offshore Wind Master Plan	\$5,000,000	\$4,918,385	\$81,615	\$5,000,000	100%	-
Offshore Wind Pre-Development Activities	\$10,000,000	\$5,186,664	\$4,672,837	\$9,859,500	99%	\$140,500
Large-Scale Renewables Chapter Total	\$15,000,000	\$10,105,049	\$4,754,452	\$14,859,500	99%	\$140,500
REV Technical Assistance Chapter						
REV Connect	\$3,000,000	\$2,543,259	\$396,616	\$2,939,875	98%	\$60,125
REV Technical Assistance Chapter Total	\$3,000,000	\$2,543,259	\$396,616	\$2,939,875	98%	\$60,125
Energy Storage Chapter						
Reducing Barriers to Distributed Deployment	\$24,450,000	\$4,524,696	\$6,907,914	\$11,432,610	47%	\$13,017,390
Solar Plus Energy Storage	\$40,000,000	\$17,417	\$36,884,299	\$36,901,716	92%	\$3,098,284
Energy Storage Chapter Total	\$64,450,000	\$4,542,113	\$43,792,213	\$48,334,326	75%	\$16,115,674
Clean Transportation Chapter						
Electric Vehicles - Rebate	\$39,500,000	\$16,673,614	\$1,356,749	\$18,030,363	46%	\$21,469,637
Clean Transportation Chapter Total	\$39,500,000	\$16,673,614	\$1,356,749	\$18,030,363	46%	\$21,469,637

Table 6 continued

Initiative	Budget Approved as of June 30, 2019 ^a	Expended Funds ^b	Committed Funds ^c	Total Progress ^d	% of Approved Budget Committed ^e	Budget Approved Remaining Balance ^f
Agriculture Chapter						
2030 GLASE	\$5,000,000	\$959,892	\$4,040,108	\$5,000,000	100%	-
Advancing Agricultural Energy Technologies	\$3,760,000	\$3,508	-	\$3,508	0.1%	\$3,756,492
Agriculture Chapter Total	\$8,760,000	\$963,401	\$4,040,108	\$5,003,508	57%	\$3,756,492
Low- to Moderate-Income Chapter						
Healthy Homes Feasibility Study	\$212,147	\$170,315	\$41,832	\$212,147	100%	-
LMI Multifamily	\$50,189,418	\$3,752,478	\$17,575,149	\$21,327,627	42%	\$28,861,791
Single Family - Low Income	\$169,760,983	\$84,555,736	\$2,101,254	\$86,656,990	51%	\$83,103,993
Single Family - Moderate Income	\$59,500,878	\$32,140,250	\$972,257	\$33,112,507	56%	\$26,388,371
Low-Income Forum on Energy	\$1,300,000	\$251,514	\$77,227	\$328,741	25%	\$971,259
RetrofitNY - LMI	\$30,503,500	\$1,188,384	\$2,439,013	\$3,627,397	12%	\$26,876,103
REvitalize	\$725,000	\$187,257	\$123,528	\$310,785	43%	\$414,215
New Construction - LMI	\$24,784,800	\$415,340	\$1,368,203	\$1,783,543	7%	\$23,001,257
Solar For All	\$21,245,000	\$610,036	\$11,879,140	\$12,489,176	59%	\$8,755,824
Low Rise New Construction Transition - LMI	\$8,487,000	\$2,073,600	\$5,798,930	\$7,872,531	93%	\$614,469
Multifamily New Construction Transition - LMI	\$10,879,000	\$1,538,636	\$9,534,557	\$11,073,193	102%	(\$194,192)
NYS Healthy Homes Value Based Payment Pilot	\$9,813,654	-	-	-	0%	\$9,813,655
Low- to Moderate-Income Chapter Total	\$387,401,380	\$126,883,545	\$51,911,091	\$178,794,636	46%	\$208,606,744
Workforce Development and Training Chapter						
Workforce Development Industry Partnerships	\$21,345,000	\$2,563,883	\$6,521,800	\$9,085,684	43%	\$12,259,316
Clean Technology and Energy Efficiency Talent Pipeline	\$47,000,000	\$131,620	\$2,782,192	\$2,913,812	6%	\$44,086,188
Workforce Development and Training Chapter Total	\$68,345,000	\$2,695,503	\$9,303,992	\$11,999,495	18%	\$56,345,505
Renewable Heating and Cooling						
Heat Pumps and Solar Thermal	\$47,211,685	\$11,981,596	\$14,251,203	\$26,232,799	56%	\$20,978,886
Renewable Heat NY	\$13,487,000	\$4,611,259	\$1,704,683	\$6,315,941	47%	\$7,171,059
Renewable Heating and Cooling Total	\$60,698,685	\$16,592,855	\$15,955,885	\$32,548,740	54%	\$28,149,945
Clean Energy Products Chapter						
Underutilized Product Support	\$46,465,000	\$8,350,674	\$1,318,777	\$9,669,451	21%	\$36,795,549
Clean Energy Products Chapter Total	\$46,465,000	\$8,350,674	\$1,318,777	\$9,669,451	21%	\$36,795,549
Multi-Sector Solutions Chapter						
Soft Cost Challenge	\$10,000,000	\$121,375	-	\$121,375	1%	\$9,878,625
Technical Services	\$36,293,312	\$859,919	\$9,934,392	\$10,794,311	30%	\$25,499,001
Commercial and Industrial Carbon Challenge	\$75,222,650	\$84,875	\$9,963,395	\$10,048,270	13%	\$65,174,380
Clean Energy Siting and Soft Cost Reduction	\$8,795,000	\$324,039	\$394,570	\$718,609	8%	\$8,076,391
Pay for Performance	\$55,756,709	\$374,626	\$2,408,443	\$2,783,070	5%	\$52,973,639
Information Products and Brokering	\$8,500,000	\$212	\$388,958	\$389,170	5%	\$8,110,831
Multi-Sector Solutions Chapter Total	\$194,567,671	\$1,765,046	\$23,089,759	\$24,854,805	13%	\$169,712,866

Table 6 continued

Initiative	Budget Approved as of June 30, 2019 ^a	Expended Funds ^b	Committed Funds ^c	Total Progress ^d	% of Approved Budget Committed ^e	Budget Approved Remaining Balance ^f
Codes Chapter						
Code to Zero	\$21,000,000	\$915,049	\$924,025	\$1,839,075	9%	\$19,160,925
Codes Chapter Total	\$21,000,000	\$915,049	\$924,025	\$1,839,075	9%	\$19,160,925
On-Site Power Chapter						
Fuel Cells	\$15,000,000	\$56,507	\$3,237,500	\$3,294,007	22%	\$11,705,993
On-Site Power Chapter Total	\$15,000,000	\$56,507	\$3,237,500	\$3,294,007	22%	\$11,705,993
New Construction Chapter						
New Construction - Market Rate	\$124,264,632	\$777,617	\$10,757,711	\$11,535,327	9%	\$112,729,305
New Construction Chapter Total	\$124,264,632	\$777,617	\$10,757,711	\$11,535,327	9%	\$112,729,305
Residential Chapter						
Engaging New Markets	\$15,988,015	\$973,226	\$2,920,210	\$3,893,437	24%	\$12,094,578
Residential Chapter Total	\$15,988,015	\$973,226	\$2,920,210	\$3,893,437	24%	\$12,094,578
NYS Cost Recovery Fee Market Development	\$36,812,179	\$4,465,274	-	\$4,465,274	12%	\$32,346,905
Total Market Development	\$1,293,422,908	\$226,464,998	\$221,373,979	\$447,838,977	35%	\$845,583,931

* Totals may not sum exactly due to rounding

^a Funds approved by DPS as of June 30, 2019

^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 Expended and Committed Funds

^e Percentage of the committed budget

^f Difference between Budget Approved Funds and Committed Funds

4 Innovation and Research Initiative Specific Results

Table 7. Innovation and Research Initiative Level Budgets and Spending

See Endnotes for more information^{14, 15}

Initiative	Budget Approved as of June 30, 2019 ^a	Expended Funds ^b	Committed Funds ^c	Total Progress ^d	% of Approved Budget Committed ^e	Budget Approved Remaining Balance ^f
Market Characterization & Design Innovation & Research	\$250,000	\$653	-	\$653	0.3%	\$249,347
Grid Modernization Chapter						
DER Interconnection	\$6,300,000	\$2,332,904	\$605,644	\$2,938,548	47%	\$3,361,452
High Performing Electric Grid	\$110,500,000	\$5,981,857	\$17,257,850	\$23,239,707	21%	\$87,260,293
Power Electronics Manufacturing Consortium	\$16,700,000	\$16,700,000	-	\$16,700,000	100%	-
Grid Modernization Chapter Total	\$133,500,000	\$25,014,761	\$17,863,494	\$42,878,255	32%	\$90,621,745
Innovation Capacity and Business Development Chapter						
CleanTech Startup Growth	\$58,200,000	\$7,390,305	\$28,560,681	\$35,950,986	62%	\$22,249,014
Manufacturing Corps	\$12,000,000	\$1,797,479	\$2,414,500	\$4,211,979	35%	\$7,788,021
Novel Business Models and Offerings	\$16,100,000	\$153,602	\$2,487,535	\$2,641,137	16%	\$13,458,863
Innovation Capacity and Business Development Chapter Total	\$86,300,000	\$9,341,386	\$33,462,716	\$42,804,102	50%	\$43,495,898
Building Innovation Chapter						
NextGen HVAC	\$15,000,000	\$999,958	\$6,659,807	\$7,659,765	51%	\$7,340,235
Building Innovation Chapter Total	\$15,000,000	\$999,958	\$6,659,807	\$7,659,765	51%	\$7,340,235
Clean Transportation Chapter						
Electric Vehicles - Innovation	\$11,850,000	\$1,490,269	\$6,376,624	\$7,866,893	66%	\$3,983,107
Public Transportation and Electrified Rail	\$18,500,000	\$357,788	\$4,250,957	\$4,608,744	25%	\$13,891,256
Clean Transportation Chapter Total	\$30,350,000	\$1,848,057	\$10,627,581	\$12,475,637	41%	\$17,874,363
Energy-Related Environmental Research Chapter						
Energy-Related Environmental Research	\$30,000,000	\$2,219,161	\$8,879,610	\$11,098,771	37%	\$18,901,229
Energy-Related Environmental Research Chapter Total	\$30,000,000	\$2,219,161	\$8,879,610	\$11,098,771	37%	\$18,901,229
Renewables Optimization Chapter						
Energy Storage Technology and Product Development	\$33,000,000	\$1,066,703	\$7,580,811	\$8,647,514	26%	\$24,352,486
National Offshore Wind Research & Development Consortium	\$22,500,000	\$334,217	\$5,516,862	\$5,851,079	26%	\$16,648,921
Renewables Optimization Chapter Total	\$55,500,000	\$1,400,920	\$13,097,674	\$14,498,593	26%	\$41,001,407
NYS Cost Recovery Fee Innovation & Research	\$8,596,659	\$558,437	-	\$558,437	6%	\$8,038,222
Innovation Capacity and Bus. Dev. Chapter Total	\$359,496,659	\$41,383,331	\$90,590,882	\$131,974,213	37%	\$227,522,446

Table notes are on the next page

- * Totals may not sum exactly due to rounding
- a Funds approved by DPS as of June 30, 2019
- 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 Expended and Committed Funds
- e Percentage of the committed budget
- f Difference between Budget Approved Funds and Committed Funds

Table 8. Market Development and Innovation and Research Portfolio

Committed Benefits Progress to Date—Annual

Initiative	Completed Projects through March 31, 2019 with Adjustments	Completed Projects through 4/1/19 - 6/30/19	Total Completed Projects through June 30, 2019	Current Pipeline Through June 30, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Planned Benefits Through Q2 2019	% of Cumulative Annual Planned Benefits Through Q2 2019	Total Cumulative Annual Planned Benefits through 2025	% of Total Cumulative Annual Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	257,413	50,448	307,861	1,295,274	1,603,135	1,647,685	97%	8,457,957	19%
Energy Efficiency (MMBtu)	5,016,963	471,773	5,488,737	5,628,837	11,117,573	11,551,094	96%	38,406,210	29%
Energy Efficiency (MW)	13	1	14	110	125	*	-	*	-
Renewable Energy (MWh)	57,403	2,350	59,753	70,497	130,251	*	-	*	-
Renewable Energy (MW)	47	14	62	10	71	*	-	*	-
CO2e Reductions (metric tons)	725,888	48,632	774,521	858,725	1,633,246	*	-	*	-
Customer Bill Savings (\$ million)	\$79.45	\$11.37	\$90.83	\$212.27	\$303.10	*	-	*	-
Leveraged Funds (\$ million)	\$785.88	\$104.66	\$890.54	\$1,319.17	\$2,209.71	*	-	*	-
Innovation and Research									
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)	\$234.44	-	\$234.44	\$225.54	\$459.98	*	-	*	-
Total Energy Efficiency (MWh)	257,413	307,861	565,274	1,295,274	1,860,548				
Total Energy Efficiency (MMBtu)	5,016,963	471,773	5,488,737	5,628,837	11,117,573				
Total Energy Efficiency (MW)	13.2	1.3	14	110	125				
Total Renewable Energy (MWh)	57,403	2,350	59,753	70,497	130,251				
Total Renewable Energy (MW)	47	14	62	10	71				
Total CO2e Reductions (metric tons)	725,888	48,632	774,521	858,725	1,633,246				
Total Customer Bill Savings (\$ million)	\$79.45	\$11.37	\$90.83	\$212.27	\$303.10				
Total Leveraged Funds (\$ million)	\$1,020.33	\$104.66	\$1,124.98	\$1,544.71	\$2,669.69				

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

Table 9. Market Development and Innovation and Research Portfolio

Committed Benefits Progress to Date—Lifetime

Initiative	Completed Projects through March 31, 2019 with Adjustments	Completed Projects through 4/1/19 - 6/30/19	Total Completed Projects through June 30, 2019	Current Pipeline Through June 30, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Lifetime Planned Benefits Through Q2 2019	% of Cumulative Lifetime Planned Benefits Through Q2 2019	Total Cumulative Lifetime Planned Benefits through 2025	% of Total Cumulative Lifetime Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	4,041,201	793,167	4,834,368	18,761,905	23,596,273	*	-	*	-
Energy Efficiency (MMBtu)	79,560,187	7,977,544	87,537,731	81,742,407	169,280,137	*	-	*	-
Renewable Energy (MWh)	867,161	37,054	904,215	808,376	1,712,591	2,098,174	82%	7,046,422	24%
CO2e Reductions (metric tons)	11,226,521	788,458	12,014,979	11,631,406	23,646,386	25,010,894	95%	82,692,315	29%
Customer Bill Savings (\$ million)	\$1,235.85	\$183.34	\$1,419.19	\$2,984.60	\$4,403.79	\$4,358.96	101%	\$10,300.35	43%
Leveraged Funds (\$ million)	\$785.88	\$104.66	\$890.54	\$1,319.17	\$2,209.71	\$2,347.34	94%	\$6,581.61	34%
Innovation and Research									
Energy Efficiency (MWh)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MMBtu)	-	-	-	-	-	*	-	*	-
Renewable Energy (MWh)	-	-	-	-	-	*	-	*	-
CO2e Reductions (metric tons)	-	-	-	-	-	*	-	*	-
Customer Bill Savings (\$ million)	-	-	-	-	-	*	-	*	-
Leveraged Funds (\$ million)	\$234.44	-	\$234.44	\$225.54	\$459.98	\$652.76	70%	\$1,613.26	29%
Total Energy Efficiency (MWh)	4,041,201	793,167	4,834,368	18,761,905	23,596,273	-	-	-	-
Total Energy Efficiency (MMBtu)	79,560,187	7,977,544	87,537,731	81,742,407	169,280,137	-	-	-	-
Total Renewable Energy (MWh)	867,161	37,054	904,215	808,376	1,712,591	-	-	-	-
Total CO2e Reductions (metric tons)	11,226,521	788,458	12,014,979	11,631,406	23,646,386	-	-	-	-
Total Customer Bill Savings (\$ million)	\$1,235.85	\$183.34	\$1,419.19	\$2,984.60	\$4,403.79	-	-	-	-
Total Leveraged Funds (\$ million)	\$1,020.33	\$104.66	\$1,124.98	\$1,544.71	\$2,669.69	-	-	-	-

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

Appendix A. Near-Term Milestones

Near-Term Milestones for Real Estate Tenant

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2016–2020	Tenants will incorporate energy efficiency measures from tenant-specific packages into their designs. Observed gains from the National Resource Defense Council (NRDC), were 25–40% of energy saved above the 2007 code; NYSERDA is projecting gains of 15–20% against the 2010 and 2012 code. The actual savings will be identified through measurement and verification (M&V).	A total of 484 tenant sites are enrolled in the program. Projects resulted in increased energy efficiency in tenant spaces and have "primed" the sector for more energy efficiency projects. A major Program Opportunity Notice (PON) revision launched in early April 2019. This revised PON aims to increase participation and drive deeper energy savings in tenant spaces, as well as engage more portfolio owners in the program.
	2018–2024	Building specific packages demonstrate replicability of tenant-specific model to the whole building for development of building-specific packages.	Some energy consultants and building owners have begun to see the value of these generic packages and have started to make use of them. NYSERDA is seeing different use cases emerge and will continue to track this development to inform future program direction. In the new program revision that is currently in the planning stages, NYSERDA is investigating ways to further engage building owners and portfolios specifically, which can benefit from this more standardized approach to identifying energy savings.
	2018–2024	Engagement with stakeholders involves all identified market actors.	Continued engagement with key stakeholders, through outreach and market research efforts, allows continual identification of areas of opportunity to engage tenants in energy efficiency and be responsive to the market. Brokers are a hard to reach audience and NYSERDA is strategizing on how to best engage them in the process—a full day of continuing education was held at the Real Estate Board of New York (REBNY) on May 14th, 2019 and was very well received. Large property management companies are another group that NYSERDA plans to engage more consistently to identify opportunities to support their participation in driving energy efficiency in commercial tenant spaces. NYSERDA conducted voice of customer with property management firms and convened a steering committee to assist with efforts of developing the revised solicitation and providing new perspectives from a new group of stakeholders. This input has been invaluable in ensuring the program is positioned in the most effective way possible, to engage the broad cross-section of stakeholders that are influential actors in the commercial tenant office space market segment.

Near-Term Milestones for Real Estate Tenant Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018–2024	Secure commitments from building owners and managers and brokers to provide building-specific packages to new tenants with leasing materials.	Currently, about one-third of the projects in the program are for building owners commissioning generic packages. Different use cases of these generic packages are emerging and are providing interesting insight into the motivations and intentions of building owners when it comes to engaging tenants. Some building owners have understood the value of generic packages to engage tenants, while others still need to better understand how to leverage the opportunity and realize the benefits of including this information in their leasing packages. NYSERDA continues to monitor how building owners are using generic packages to see in what other ways the building owners might be engaging their tenants (existing or prospective) in the process of increasing energy efficiency in tenant spaces.
	2018–2024	New tenants use building-specific energy efficiency packages (actual participation identified from results reported by building owner).	As building owners understand the value of the generic package, more will want to include it in their tenant engagement activities and leasing process. These activities are still in their infancy as the program gathers momentum in the marketplace and building owners explore different ways to leverage the program to get tenants to implement energy efficiency. NYSERDA is beginning to see different use cases of building owners who can leveraging information from a generic package to engage tenants, such as developing tenant design guidelines and using the information from a generic package to inform a test fit out.
	2018–2024	Projects demonstrate that building-specific packages can be used within the normal timeframe of the tenant fit-out process and do not slow down the process.	As more building owners commission generic packages for their tenants, NYSERDA will be able to assess how successful these packages are as engagement tools for tenants. A program evaluation is underway and will provide more insight into this question.
	2018–2024	NYSERDA validates energy models, energy savings, incremental cost, and return on investment for tenant projects.	Impact evaluation of completed projects is expected to begin in Q3 2019.
	2018–2024	NYSERDA confirms economic savings/value while presenting soft cost (i.e., productivity) opportunities as additional benefits to the market.	Confirmation of soft-cost opportunities and benefits will begin to be evaluated in Q3 2019.

Near-Term Milestones for Real Estate Tenant Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018–2024	NYSERDA gathers data on tenant productivity, satisfaction, and wellness through surveys created with each tenant’s Corporate Social Responsibility and Human Resource teams.	To date, project completion dates, and types of projects completed have not been conducive to this type of data collection and analysis.
	2018–2024	For buildings that offer tenant efficiency packages, 30% of new tenants use the package to implement energy efficiency measures that go above code.	Building owners are just beginning to understand the value of the generic package and exploring different use cases within their organizations. Service providers are also beginning to see the value of this service and as more building owners sign up, the impact on tenants’ behaviors will become more apparent.

Near-Term Milestones for Energy Management Technology

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	NYSERDA launches RTEM Data Store to warehouse and analyze data associated with RTEM projects	NYSERDA is collecting RTEM project data sets and is on track to achieve this milestone.
	2019	RTEM vendors begin to use RTEM incentives to integrate multiple systems within a building	RTEM vendors have begun to develop RTEM projects that integrate multiple energy systems in a building onto their RTEM system.

Near-Term Milestones for REV Campus Challenge

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2016–2019	A total of 120 out of 250 institutions sign up to be REV Campus Challenge Members.	The REV Campus Challenge has 114 institutions signed up as of the end of Q2 2019.
	2016–2019	Members make progress and receive recognition as demonstrated by new and revised planning, new commitments to sustainability goals, and clean energy projects started and completed.	<p>REV Campus Challenge annual workshops were held in June 2019, with four members hosting and having the opportunity to discuss on-campus projects and have students present.</p> <p>NYSERDA partnered with the NY Coalition for Sustainability in Higher Education (NYCSHE) to highlight State institutions that have been awarded or recognized this year for their clean energy efforts at the State of NY Sustainability Conference November 2018.</p> <p>REV Campus Challenge is assisting members to create member spotlights highlighting campus clean energy goals, projects, and initiatives. Spotlights can be used by the member institution as marketing collateral and NYSERDA will be posting them on the REV Campus Challenge website, on social media, and partnering with the Association for the Advancement of Sustainability in Higher Education (AASHE), New York Coalition for Sustainability in Higher Education and other high-visibility market stakeholder platforms to recognize and share member efforts. Twelve member spotlights are in development as of the end of Q2 2019.</p>

Near-Term Milestones for P-12 Schools

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Launch a clean energy benchmarking open enrollment program.	The open enrollment program launched on April 11, 2019.
	2018	Begin examining efforts to minimize hard and soft costs associated with delivering technical analysis for schools such as energy master plan development.	The examination efforts to minimize hard and soft costs associated with delivering technical analysis for schools started in Q4 2018. An Energy Master Plan outline was created to help guide commercial customers on the development of an Energy Master Plan. In addition, NYSERDA had a meeting with the State Education Department—Office of Facilities Planning to discuss how the FlexTech Program could support the development of Energy Master Plans for the P-12 sector.
	2019	Launch a competitive solicitation to provide gap assistance.	The competitive solicitation for gap assistance will launch in Q3 2019.

Near-Term Milestones for Continuous Energy Improvement Initiative

On-Site Energy Manager

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017 and 2018	Business case content for consultant marketing plans, which address this need in the industrial market.	Case studies and road maps will be developed for each project and distributed to the market. Six case studies and road maps have been approved to date; four have been distributed to the market via the NYSERDA webpage.
	2018	Successful dissemination of training, road maps, case studies, and vetted consultant lists creates both supply for On-site Energy Manager by qualified technical consultants and demand for the role at industrial sites.	

Near-Term Milestones for Continuous Energy Improvement Initiative

Strategic Energy Management

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018 and beyond	Industrial facilities seek out developed information and standardized tools as well as contractor support to implement and adopt SEM. Tracked inquiries and dissemination of case studies, training, SEM resources, and vetted consultant list.	The materials are in development and information from the first cohort's successes is being collected. Three case studies are finalized, and additional materials are being developed to support SEM.
	2018 and beyond	SEM replaces the ad hoc energy project approach resulting in deeper and continuous energy savings and energy decision-making at industrial facilities. Critical staff can express how the energy measures they've implemented have affected their bottom line. Facilities realize 1–2% reductions in their energy consumption annually. For large industrial facilities, this equates to approximately 150–300 MWh, 1,100–2,500 MMBtu Natural Gas, 75–160 MMBtu Oil, and \$100,000 in energy savings per participant in the first year.	To date, facilities participating in the 2017 Cohort have realized an average savings of 0.8% in their electric usage (for the facilities that have electric models), and an average of a 3% reduction in their natural gas usage (for the facilities that have natural gas models).

Near-Term Milestones for Continuous Energy Improvement Initiative

Industrial Real Time Energy Management

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Initiate development and dissemination of EMIS case studies, webinars, and knowledge transfer sessions in a variety of media/forums.	Market uptake on the solution has been slow, and NYSERDA is modifying engagement with critical market actors (RTEM vendors in the Industrial space) to establish new milestone markers such as four to six qualified vendors and at least 12 applications by year end 2019.

Near-Term Milestones for Clean Energy Communities

Complete ✓	Time Frame	Milestone	Explanation of Progress
77	2016–2019	NYSERDA conducted market research on impact of initial uptake of high-impact actions and adjusted the Clean Energy Communities program accordingly. NYSERDA will continuously compile feedback from communities on high-impact actions and associated tools and resources and adjust accordingly.	NYSERDA released minor revisions to the Clean Energy Communities program to better accommodate the needs of communities and to clarify program requirements. In addition, NYSERDA is in the process of developing an Investment Plan update to better serve communities interested in taking advanced action beyond the original program design.

Near-Term Milestones Community Energy Engagement

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	NYSERDA initiates awards proposals for regional-specific pilot projects.	The solicitation was issued in Q2 2019 and NYSERDA will initiate award proposals by the end of 2019.
	2018–2020	NYSERDA develops one or more case studies on regional-specific pilot projects and other support provided through the base activities.	Outreach kicked off in May of 2018. NYSERDA expects to begin developing case studies in mid-to-late 2019. The first case studies will likely be focused on participant successes, while the regional-specific pilot case studies will likely be delayed until post-pilot launch, sometime in late 2019.
	2019	Conduct surveys of customers assisted by local-based organizations (LBO) to assess performance.	Outreach kicked off in May of 2018. NYSERDA expects to begin conducting surveys in late 2019 after the program has been up and running for close to two years.

Near-Term Milestones for Offshore Wind Pre-Development Activities

Complete ✓	Time Frame	Milestone	Explanation of Progress
	n/a	Reports providing site-specific data needed to support detailed siting, design, and permitting of Offshore Wind project(s).	Two metocean buoys have been secured for deployment for measuring wind, wave, and other data. Since Q1 2019, buoys have undergone calibration process in the North Sea and expected shipment to New York by Q3, with deployment before end of 2019.

Near-Term Milestones for REV Connect

All near-term milestones have been completed and reported in previous periods.

Near-Term Milestones for Reducing Barriers to Deploying Distributed Energy Storage

All near-term milestones have been completed and reported in previous periods.

Near-Term Milestones for Solar Plus Energy Storage

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018–2020	Award incentives to solar plus storage projects.	The solar plus storage offering became available under NY-Sun on October 25, 2018. At the end of Q2 2019, 13 projects had received awards under the initial offering.
	2019–2023	Completion of solar plus storage projects.	Project completion is not expected until 2023.
	2019–2020	Publish case studies with learnings from initial solar plus storage projects.	Case studies will be developed and published after appropriate projects are complete, anticipated Q3 2019 through Q4 2020.
	2019	Participation in IPWG and Interconnection Technical Working Group (ITWG) meetings throughout the year to address issues of adding storage to solar.	Solar plus storage issues are on ITWG agenda in 2019. Additional topics important to solar plus storage are being drafted and considered for future IPWG/ITWG meetings.

Near-Term Milestones for Electric Vehicles—Rebate

All near-term milestones have been completed and reported in previous periods.

Near-Term Milestones for Greenhouse Lighting and Systems Engineering (GLASE)

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Review and approve Consortium business plan to attain financial self-sustainability in 2023.	The Executive Director of GLASE is working to complete the business plan. The plan is linked with the marketing plan that was being refined in 2019. The Rensselaer Polytechnic Institute principal investigator left in February, causing delays. It is anticipated that the business plan will be updated in Q3 2019.
	2018	Monitor small (6,000 square feet) pilot demonstration of a basic light and shade control system.	The principal investigator located a new site and continues to work on a model that will be able to provide baseline data (based on actuals from the site) to keep the initial pilot demonstration schedule.
	2018	Publish case study of demonstration.	Case study dependent on small pilot demonstration. Progress continues on the demonstration project.
	2019	Monitor small (6,000 square feet) pilot demonstration of CO ₂ supplementation integrated with the light and shade control system.	The principal investigator continues to work on a model that will provide baseline data (based on actuals from the site) to keep the initial pilot demonstration schedule.
	2019	Monitor large (20,000 square feet) pilot demonstration of a basic light and shade control system.	The principal investigator at Cornell secured a large demonstration site and an agreement has been signed. This site is ideal because it enables a side-by-side baseline and modified environment data collection.
	2019	Publish case study of demonstrations.	The case study will be published once the demonstration data has been collected and analyzed.

Near-Term Milestones for Advancing Agricultural Energy Technologies

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Contract with teams to demonstrate underused and emerging technologies.	Four contracts were awarded, and contracting is underway.

Near-Term Milestones for RetrofitNY—LMI

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	One or more solutions pilot projects awarded, and design process begins.	Six design/construction teams completed the design of high-performance retrofit solutions on six affordable housing buildings in December 2018. NYSERDA released two Program Opportunity Notices (PONs) to provide funding to support the implementation of some of these solutions. A first application was received in the first quarter of 2019 and construction is expected to start for this project by the end of 2019.

Near-Term Milestones for REVitalize

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Commencement of community planning activities, development of community plan, and testing of the toolkit.	<p>People United for Sustainable Housing (PUSH) Buffalo facilitated five focus group meetings with PUSH Community Hiring Hall workers and other residents with a background in construction to gather their input and ideas to inform the design of the PUSH Sustainability Workforce Training Center. PUSH is organizing and developing questions for additional focus group meetings and one-on-one's with staff, trainers, geothermal professionals, solar professionals, weatherization professionals, labor unions, and neighbors. Sustainable Binghamton focused on expanding the Binghamton Community Power alliance, catalyzing cooperation across agencies and organizations and seeking more resource to expand and continue work beyond the close of the present project grant.</p> <p>The development of tool kits has been placed on hold indefinitely.</p>
	2017	Community-scale clean energy project development and implementation started.	Sustainable Binghamton submitted an application to the Department of Environmental Conservation Environmental Justice Program together with the Binghamton University Sustainable Communities program to support a combined research, education, and outreach program, which would allow them to systematically gather data on energy burden and energy program uptake, and would increase our capacity to enroll residents in low and moderate income energy programs, including solar for all.
	2019	NYSERDA receives feedback from community groups and on the toolkit.	NYSERDA is working on processing feedback and input to develop best practices.
	2019	Completion of five community energy projects.	NYSERDA funded four REVitalize projects. The City of Utica completed its REVitalize project in March 2019. PUSH, Sustainable Binghamton and WEACT continue to engage the community and work towards project completion.
	2019	NYSERDA refines toolkit and conducts technology transfer to communicate effective models of finance and ownership, as well as the toolkit.	NYSERDA continues to work with the REVitalize contractors on the development of tools and best practices for community and stakeholder engagement.

Near-Term Milestones for Low-Income Forum on Energy

Complete	Time Frame	Milestone	Explanation of Progress
✓			
	2019	Issue a competitive solicitation for program support or issue a contract extension for existing implementation services.	A one-year contract extension is expected as the current contract runs through August 31, 2019. Contract extension discussions began in Q2 2019.
✓	2019	Implement a series of regional meetings across the State in Q2 of 2019.	The LIFE 2019 Regional Meeting Series was executed in May and June 2019 in seven locations throughout the State with participation from 474 stakeholders.

Near-Term Milestones for Healthy Homes Feasibility Study

Complete	Time Frame	Milestone	Explanation of Progress
✓			
	2017	Pilot design is complete.	Completion of pilot design is expected by Q3 2019.
	2017	Commencement of pilot activities.	This milestone is now included in the New York State Healthy Homes Value-Based Payment Pilot initiative and updates will be provided within that initiative.

Near-Term Milestones for Single Family—Low Income

All near-term milestones have been completed and reported in previous periods.

Near-Term Milestones for Single Family—Moderate Income

All near-term milestones have been completed and reported in previous periods.

Near-Term Milestones for Low- to Moderate-Income Multifamily Housing

Complete	Time Frame	Milestone	Explanation of Progress
✓			
	2018–2021	Continue to evaluate market response to incentive levels and thresholds and adjust as needed.	NYSERDA has launched new communication and outreach efforts to continue to improve program intake. As a result, program intake doubled in 2018 compared to 2017, and continued to increase in the first half of 2019.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Specification list of healthy homes interventions to address asthma and household injury.	Specification list is currently in progress. Measures have been finalized.
	2019	Release of an RFQ to identify healthy homes energy/housing service providers.	RFQ is currently being drafted. Anticipated to be released in Q3 2019.
	2019	Onboarding of energy services implementation contractor and health implementation infrastructure.	Discussions about modifications to the energy services implementation contractor's scope of work are currently underway. A draft map of the health implementation infrastructure has been outlined.
	2019	Commencement of pilot implementation.	Anticipated in Q4 2019.
	2019	Secure all submissions of social determinants of health template for VBP Arrangement integration (rolling).	One draft social determinants of health template is under review.

Near-Term Milestones for Solar for All

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018–2020	Issue additional solicitation(s) for community solar projects, if needed.	The next solicitation is expected to be released in Q4 2019.
	2018–2020	Execute additional agreements with community solar projects for low-income subscriptions, if needed.	Additional agreements will be executed after release of the next solicitation.

Near-Term Milestones for Workforce Development Industry Partnerships

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017–2018	Data collected from demonstration sites to help demonstrate the business case for training.	Data collection is completed for all six business case demonstration projects. Final reports or case studies planned are complete for all but one project.
	2018–2020	Develop and implement marketing plan to share results of business case demonstrations and building operations and maintenance project results. Share intervention templates with industry.	NYSERDA is developing a marketing plan to share the results of the projects and business case demonstrations. Two business cases are completed and will be added to the Workforce Development website in Q3 2019.

Near-Term Milestones for Clean Technology and Energy Efficiency Talent Pipeline

All near-term milestones have been completed and reported in previous periods.

Near-Term Milestones Heat Pumps and Solar Thermal

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Launch ground-source heat pump (GSHP) contractor mentoring program.	GSHP market partners signaled that this timing is premature and prefer a pilot in a geographical area that can be expanded statewide.
	2019	Disseminate Renewable Heating & Cooling (RH&C) case studies and design and installation best practices to the market.	Design and Installation practices checklist has been developed and is posted on the GSHP Rebate Program website. Case studies likely won't be developed until projects are installed that result from the Geothermal Clean Energy Challenge.
	2019	Develop aggregated procurement for colleges and universities and State and local buildings.	One contractor will be used to perform screenings. A separate contractor may be procured to perform American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) Level 2 audits, and schematic designs for program participants. Determination of whether aggregation strategies can be applied to eventual construction of projects is being explored.
	2019	Launch co-branded marketing awareness campaigns with the NYS investor-owner utilities.	Co-branded campaigns conducted with Central Hudson Electric and Gas and National Grid. Follow up campaigns with both are planned for this year. Con Edison was involved in developing NYSERDA's proposal for a marketing campaign in Westchester. NYSERDA is also in discussion with New York State Electric and Gas and Orange and Rockland about co-branded marketing campaigns.

Near-Term Milestones Renewable Heat NY (RHNY)

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with research partners to provide studies on wood smoke and public health.	NYSERDA is working with Cornell and the Northeast States for Coordinated Air Use Management (NESAUM) on public health studies with an update to be provided in Q3 2019.
	2018	Contract with manufacturers selected under competitive solicitation.	This will begin once the competitive solicitation is released and proposals selected. Estimated Q3 2019.
	2019	Issue competitive solicitation to seek proposals from advanced biomass heating equipment manufacturers on technology improvements.	A future round of PON 3519 NextGen HVAC will solicit proposals for advanced biomass improvement. Estimated Q3 2019.
	2019	Reissue workforce development program based on market feedback.	RHNY needs will be included in Clean Heating and Cooling Workforce Development strategy, which is under development and planned to be complete in Q4 2019.

Near-Term Milestones Underutilized Product Support

See Endnotes section for more information¹⁶

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Case studies developed and deployed in the market, along with current resources from regional and national organizations.	Initially, NYSERDA deployed best practice resources for contractors from the Northeast Energy Efficiency Partnership. The development of case studies to exhibit savings potential will follow. A total of 50 NYSERDA-funded ASHP demonstration projects have been awarded, with 16 currently functioning and monitoring data. Report out on savings has begun in order to populate factual results for case studies, is currently being drafted and expected to be finalized in Q3 2019.
	2018	Mapping tool for Air Source Heat Pumps (ASHP) potential released in the market.	Customer Targeting Tool was tested with communities in Q4 2018 and issued to a sampling of ASHP and GSHP installers during Q1 2019. Fifty-two installers and 14 communities are now registered to use the tool with 25 organizations completing 54 targeting programs. A full rollout is expected to be completed in Q3 2019.
	2018	Issue competitive solicitation to identify and test alternative business models.	NYSERDA is currently acquiring feedback from key market actors and drafting a competitive solicitation to test alternative business models that drive adoption of energy efficiency through an “As a Service” market offering. Targeting a Q3 2019 release.
	2019	Issue open solicitation to expand alternative business models based on results from competitive solicitation in 2018.	This open solicitation is dependent on the outcome of the Business Model Innovation solicitation that is targeted to be released in Q3 2019.
	2019	Efficiency and cost calculator released in the market.	NYSERDA is part of a multi-state collaboration supporting the Clean Energy States Alliance (CESA) to develop a fuel-switching cost calculator (that includes ASHP and GSHP options). VEIC is now building the tool based on input from the collaboration. The web-based tool will be completed in Q4 2019.
	2019	Issue competitive solicitation to support compliance with product standards, in conjunction with other states.	This is on hold while California explores expanding its IT systems to support compliance for other states.
	2019	Launch open enrollment incentive program for Advanced Commercial HVAC systems.	A determination has still not been made on whether NYSERDA will be spearheading this initiative or transitioned to joint utilities along with other heat pump technologies.

Near-Term Milestones for Energy Efficiency Soft Cost Challenge

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Issue competitive solicitation for first round of the challenge.	Solicitation on hold. The initiative as outlined within the investment plan is currently on hold. NYSERDA is exploring opportunities to integrate soft-cost reduction strategies within the single-family, multifamily, and commercial programs. NYSERDA is also undertaking a study to characterize and quantify energy efficiency soft costs. As the study is completed in late 2019 it will inform refinement of the investment plan.

Near-Term Milestones for Technical Services

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Contract with third-party to support best practices development including the farm management best practices guide.	Request for proposal to solicit technical content and outreach for an energy-related farm management best practices was released in Q2 2019. Proposals were due July 2019.
	2019	Begin examining the results of pilot(s) to determine if additional rounds of the same pilot are needed in the market or if new pilots are needed. Subsequent milestones will be updated accordingly based on the result of this review.	Review of On-site Energy Manager in-progress. Extension of this solicitation expected in Q4 2019. Review of Aggregation pilot in progress. A new/revised solicitation is expected in Q3 2020.

Near-Term Milestones for Commercial and Industrial Carbon Challenge

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	(Annually through 2022)	Issue Competitive Solicitation.	The solicitation was issued May 1, 2019.
	(Annually through 2022)	Contract with selected participants.	Contracting is expected to be completed no later than Q1 2020.
	(Annually through 2026)	Conduct M&V for implemented projects. Assess program performance and participant satisfaction to test, measure, and adjust on an annual basis.	M&V and assessment of program performance and participant satisfaction will occur after projects have been completed.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Complete trainings for technical assistance providers.	NYSERDA does not consider trainings necessary at this time; however, this may be considered in the future.

Near-Term Milestones for Pay for Performance (P4P)

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Release Phase 1 procurement document(s) with utility co-administrators to solicit aggregator bids.	Procurement documentation is currently under development by NYSEERDA and Utility Administrators.
	2019	Execute Phase 1 aggregator contracts and begin Phase 1 work.	This will be completed once the Phase 1 procurements documents have been released.
	2019	Adjust design elements based on market feedback and prepare for Phase 2 solicitations.	This will be completed after Phase 1 work has begun.

Near-Term Milestones for Code to Zero

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Issue NY Stretch-Energy stretching off IECC22 2018.	NYStretch posted on website on July 1, 2019. Final NYStretch cost effectiveness analysis reports to be released August 2019.
	2018	Issue Pilot #1 solicitation to pilot alternative enforcement structures.	NYSERDA began work on this milestone in Q2 2018. Voice of customer work began in Q4 2018 and is ongoing. NYSEERDA conducting interviews with large, medium, and small municipalities, attempting to sample from several regions in the State and targeting representatives from building departments as well as elected officials.
	2018	Issue Pilot #2 solicitation for pilot communities to adopt NY Stretch-Energy (IECC2018).	Voice of customer will continue through Q3 2019. Solicitation development will begin after release of NYStretch code, cost effectiveness analyses, and toolkit items, expected in August 2019, with projected issuance in Q4 2019.

Near-Term Milestones for Code to Zero continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Finalize plan to codify stretch-to-zero as baseline by 2030.	Part of the New Buildings Institute (NBI) contract Policy Analysis and Development to Support NY Climate Objectives works on a road map started during Q3 2018; NBI is actively engaged with cross-functional NYSERDA working on the Roadmap. Expected completion in late 2019.
	2019	Issue solicitation for audience-specific training content and approaches.	\$7.5M in CEF funding to support Energy Code and NYStretch Energy Code training through 2024 was approved. Contractor selection is being finalized.
	2019	Contract Pilot(s) #1 for alternative enforcement business structures.	Contracting will occur after bid request has been released and awards made.
	2019	Contract Pilot(s) #2 for adoption of NY Stretch-Energy (IECC2018).	
	2019	Contracts for audience-specific training content and approaches.	

Near-Term Milestones for Fuel Cells

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with accepted open enrollment solicitation applicants as they apply through 2019.	Twenty-three applications have been received and two applications have been approved.
	2018	Confirm installation of equipment at site. This will start in 2018 and continue in 2019 based on timing of applications.	These activities will commence as projects are contracted. Two applications have been approved, but no equipment has been delivered to any site.
	2019	Confirm first annual performance of fuel cell operation. This will start in 2019 and continue in 2020 based on timing of applications.	Two contracts have been issued, and this installation may be operational by June 2020.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Contract with awardees for Buildings of Excellence Competition.	It is anticipated the contracts for the Buildings of Excellence competition will be completed in Q4 2019.
	2019	Issue solicitation to launch Simplified Design and Tools: Model Measure Packages activity.	The vendors selected under Request for Qualification (RFQL) 3711, which will provide the pool of vendors that will complete the analysis of high-performance projects and identify model measure packages, signed contracts with NYSERDA in Q4 2018. NYSERDA anticipates the release of the proposal soliciting these vendors to analyze measure packages to be in Q4 2019.
	2019	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Contract(s) will follow the release of the proposal to the select successful RFQL 3711 vendors.
	2019	Issue mini-bid for technical reviewers through existing NYSERDA umbrella contracts to begin performance analysis to assess project performance.	NYSERDA is evaluating timing of this analysis based on project complete estimates and expects that a proposal will be released in Q4 2019.
	2019	Contract with technical reviewers for Performance Analysis to assess project performance.	NYSERDA is evaluating timing of this analysis based on project complete estimates and expects that a proposal will be released in Q4 2019.
	2019	Contract with awardees for Simplified Design and Tools: Integrated Design Practices Advisor for first-time Developers.	Primary Energy Consultant's (PEC) will enter into contract with NYSERDA or modify their existing contract through RFP 3771. This program is an open enrollment offering, and contracts to be eligible to provide Mentoring Services will be entered on a rolling basis. PEC Mentoring Services will be accessed through NYSERDA's Standard Offer incentive programs, and the contracts for these services will be rolled into the project specific award letters offered for individual projects. The Portfolio Owner Support program is expected to contract with all program awardees by Q4 2020.

Near-Term Milestones for New Construction— Market Rate

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with awardees for Buildings of Excellence Competition.	It is anticipated the contracts for the Buildings of Excellence competition will be completed in Q4 2019.
	2019	Issue solicitation to launch Simplified Design and Tools: Model Measure Packages activity.	The vendors selected under RFQL 3711, which will provide the pool of vendors that will complete the analysis of high-performance projects and identify model measure packages, signed contracts with NYSERDA in Q4 2018. NYSERDA anticipates the release of the proposal soliciting these vendors to analyze measure packages to be in Q4 2019.
	2019	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Contract(s) will follow the release of the proposal to the select successful RFQL 3711 vendors.
	2019	Contract with awardees for Net Zero Energy/Carbon Competition.	Award Letters were issued for 10 proposed projects on December 18, 2018, following announcement of the Regional Economic Development Council awards. It is expected that most contracts will be finalized in Q3 2019.
	2019	Issue mini-bid for technical reviewers through existing NYSERDA umbrella contracts to begin performance analysis to assess project performance.	Contracts with vendors will follow the solicitation.
	2019	Contract with technical reviewers for Performance Analysis to assess project performance.	NYSERDA is evaluating timing of this analysis based on project complete estimates and expects that a proposal will be released in Q4 2019.

Milestones for New Construction—Market Rate Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Contract with awardees for Simplified Design and Tools: Integrated design practices advisor for first-time developers.	Primary Energy Consultant's (PEC) will enter into contract with NYSEERDA or modify their existing contract through RFP 3771. This program is an open enrollment offering, and contracts to be eligible to provide Mentoring Services will be entered on a rolling basis. PEC Mentoring Services will be accessed through NYSEERDA's Standard Offer incentive programs, and the contracts for these services will be rolled into the project specific award letters offered for individual projects. The Portfolio Owner Support program is expected to contract with all program awardees by Q4 2020.
	2019	Issue second Solicitation for Net Zero Energy/Carbon Competition.	The second round of the Net Zero Energy for Economic Development competition was launched on May 1, 2019. The program has been expanded in the 2019 offering to provide assistance for community-level net zero planning. Applications are being accepted through the NYS Consolidated Funding Application and are due on July 26th, 2019.
	2019	Contract with awardees for second Net Zero Energy/Carbon Competition.	Contracting will occur after awards have been made, currently expected in early 2020.

Near-Term Milestones for Information Products and Brokering

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2019	Solicitation issued to support Asset Data Matching.	The solicitation was issued May 2, 2019.
✓	2019	Solicitation issued to support DER Data Platform pilot.	The solicitation was issued April 5, 2019.
	2019	Initial Asset Data Pilot(s) are completed.	Work on target for pilot to be complete by end of 2019. The solicitation has been issued and the contractor performing the work has been selected.
	2019	Roll out heat pump Customer Targeting Tool to 100 contractors outside heat pump program, including residential EE contractors and initial P4P aggregators.	On track to achieve this milestone by end of 2019. Work is underway to optimize Customer Targeting Tool for residential EE contractors and P4P aggregators.
	2019	Issue award for the development of value proposition calculator to support adoption of energy efficiency in the small commercial sector.	On track for completion by end of 2019. Solicitation to be released in Q3 2019.
	2019	Host first hackathon, with a focus on identifying solutions that overcome barriers to energy efficiency and clean energy adoption for property managers of commercial, multifamily, and industrial building portfolios. Attract 75 proposals. Issue one to four awards to support market demonstration of solutions by developed winners.	On track to host first hackathon by end of year. NYSERDA is engaged in partnership discussions with key market actors.

Near-Term Milestones for Engaging New Markets

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Develop a package of energy efficiency related trainings for market actors prior to pilot implementation.	The package of training materials used to train market actors has been developed.
✓	2018	Launch first of targeted consumer education and awareness campaigns.	First campaign was launched in June 2019.
✓	2018	Implement initial pilot for contractors delivering home energy ratings as a sales tool.	The pilot was launched in June 2019.
	2018	Implement initial pilot to embed home energy ratings into real estate transactions.	Now that contractor use of ratings as a sales tool is launched, progress on this milestone is being made. Solicitation will launch in Q3 2019.

Near-Term Milestones for High-Performing Grid

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Issue targeted competitive solicitation #2, guided by utility supplemental distributed system implementation plans (DSIPs) and the NY Grid Modernization Roadmap.	Solicitation delayed allowing broad competitive solicitation #3 to be issued. PON 4128 anticipated to be released in July 2019.
	2017	Enter into contracts for projects awarded under the targeted competitive solicitation #2.	Contracting will begin once PON 4128 is released in July 2019.
	2018	Identify technology gaps necessary to support community grid operation based on completed NY Prize Stage 2 evaluations.	NY Prize Stage 2 project teams are actively working to complete Stage 2 deliverables by August 2019.
✓	2018	Issue targeted competitive solicitation #4.	PON 4094 was released in June 2019, with due dates for PON in August 2019.
	2019	Enter into contracts for projects awarded under the targeted competitive solicitation #4.	Contracts will be awarded after the solicitation due date in August 2019
✓	2019	Issue broad competitive solicitation #5.	PON 4074 was released on April 11, 2019 with open enrollment until end of 2020.
	2019	Enter into contracts for projects awarded under the broad competitive solicitation #5.	Contracting will be made on a continuous basis and is expected to continue through 2020 from PON 4074.

Near-Term Milestones for Power Electronics Manufacturing Consortium

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Consortium expanded to include at least four partner companies/customers.	Two consortium partners confirmed. Negotiations are in progress with additional partners.
	2018	ISO-9001 certification complete.	ISO-9001 certification has been postponed till new Tier 1 Partner is in place to replace GE.
	2018	Consortium expanded to include at least eight partner companies/customers.	Two consortium partners confirmed. Negotiations are in progress with additional partners. Waiting to add additional partners till new Tier 1 Partner is on board.
	2019	Consortium expanded to include at least 12 partner companies/customers.	

Near-Term Milestones for Cleantech Startup Growth Incubators

Complete ✓	Time Frame	Milestone	Explanation of Progress
	Starting 2017	Networking event held.	Networking events are held as part of the routine operation of the incubators. Networking events have been held as planned throughout 2017 and 2018 and Q1 2019. Additional networking events are planned through the remainder of 2019.
	Starting 2017	Entrepreneur boot camp held.	Entrepreneurial-type boot camps/workshops are held throughout the operation of the incubators. Entrepreneur boot camps have been held as planned throughout 2017 and 2018, and Q1 2019. Additional boot camps/workshops are planned through the remainder of 2019.

Near-Term Milestones for Cleantech Startup Growth Ignition Grants

Complete ✓	Time Frame	Milestone	Explanation of Progress
	Starting 2017	Investment Committee meetings held.	Investment Committee Meetings began in 2018 and have been occurring every three weeks.
	Starting 2017	Ignition grant awards issued on ongoing basis.	The solicitation launched June 1, 2018 and awards are being issued on an ongoing basis.

Near-Term Milestones for Cleantech Startup Growth Proof-of-Concept Centers (POCCs)

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Award(s) from solicitation for POCCs contracted.	No awards were made from the original solicitation, and the solicitation was reissued January 7, 2019. Contract negotiations are currently underway with two awardees. Contracts are expected to be executed by September 30, 2019.
	2019	Award(s) from solicitation for POCC support services contracted.	Awardee(s) will be chosen at a later date once the contracts with POCC awardees are executed.

Near-Term Milestones for Cleantech Startup Growth Entrepreneurs-In-Residence

Complete	Time Frame	Milestone	Explanation of Progress
✓	Each year starting in 2018	Practice Pitch, SWAT Team, and other engagements initiated.	Practice Pitch, SWAT Team, and Other Engagements were initiated shortly after the contract was fully executed November 20, 2018.

Near-Term Milestones for Cleantech Startup Growth Investor, Corporate, and Customer Engagement

Complete	Time Frame	Milestone	Explanation of Progress
✓	2018	Competitive solicitations launched.	RFQL 4150 was released June 19, 2019. The companion PON will be released in early September.
	2018	Awards from solicitations contracted.	Contracts will be completed once awards from the solicitation have been made.

Near-Term Milestones for Cleantech Startup Growth 76 West

Complete	Time Frame	Milestone	Explanation of Progress
✓	2019	Awards from third round contracted.	Contracting for awards from third round began in Q4 2018 and is expected to be completed in Q3 2019.
	2019	Awardees from fourth round selected.	Awards are expected to be made in Q4 2019.
	2019	Awardees from fourth round contracted.	Contracting will occur shortly after awards are made.

Near-Term Milestones for Cleantech Startup Growth Innovation Advisors

Complete	Time Frame	Milestone	Explanation of Progress
✓	2019	Competitive solicitation launched.	The solicitation is expected to launch in Q4 2019.
	2019	Awards from solicitation contracted.	Contracting will occur following review of proposals received. This is expected to occur in Q2 2020.

Near-Term Milestones for Novel Business Models and Offerings

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with first-round NBMO awardees.	The first contract has been executed; six additional contracts in process.
	2018	Contract with second-round NBMO awardees.	Contracting will occur after proposal reviews for the second-round due date of May 23, 2019.
	2019	Conduct preliminary program process assessment, examining the distribution of proposers, scope of proposed impact, and marketing and selection processes through first two rounds, and revise the solicitation as necessary.	The assessment will be conducted after awards from the second-round have been made.

Near-Term Milestones for NextGen HVAC

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2017	Contract projects from first technology challenge.	All projects from the first technology/innovation challenge contracted.
✓	2018	Contract projects from second technology challenge.	All contracts from second technology round contracted.
	2018	Review portfolio of activities, benefits to date, solicit market input, and reassess technology challenges areas and targets.	The review will occur in Q3 2019.
	2019	Contract projects from third technology challenge.	Six projects selected to receive contracts from the third technology challenge. Projects expected to be contacted by Q4 2019.
	2019	Issue fourth technology challenge.	Issuance of the fourth technology challenge was delayed from July to August 2019 in order to elicit a greater response.
	2019–2020	Contract projects from fourth technology challenge.	Contracting will begin once awards have been made.

Near-Term Milestones for Electric Vehicles—Innovation

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Contract with projects awarded in first competitive solicitation for the development and demonstration of EV-enabling technologies.	Contracts are being negotiated with initial award recipients from PON 3578, Round 1. Through Q2 2019, two contracts have been signed.
	2018	Complete bench-scale prototypes of economically viable technologies that enable smart charging.	Due to a delay in the launch of the solicitation, this milestone is expected to be achieved in mid- to late-2019.
	2018	Contract with projects awarded in second competitive solicitation for the development and demonstration of EV-enabling technologies.	NYSERDA made awards for Round 2 of PON 3578 in March 2019. Contracts are being negotiated with initial award recipients from PON 3578, Round 2. No contracts have been signed yet.
	2018	Fast-charging station network expanded to 30 locations statewide along major interstate corridors.	In June 2018, the New York Power Authority announced a major DC Fast Charging investment of \$40 million to install 200 DC Fast Charging stations and NYSERDA will monitor their implementation.
	2019	Issue third competitive solicitation for the development and demonstration of EV-enabling technologies.	The third solicitation is expected to launch later in 2019.
	2020	Contract with projects awarded in third competitive solicitation for the development and demonstration of EV-enabling technologies.	The third solicitation is expected to launch later in 2019.

Near-Term Milestones for Public Transportation and Electrified Rail

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with projects awarded in first competitive solicitation for the development and demonstration of public transportation technologies.	Full proposals were received in November 2018 and awards were made in March 2019. No contracts have been signed yet.
	2018	Initiate project to identify ways to update transit agency procurement processes so that they explicitly value energy savings from efficient transit technologies.	This project is expected to launch later in 2019.
	2019	Contract with projects awarded in second competitive solicitation for the development and demonstration of public transportation technologies.	NYSERDA is beginning to receive applications under the rolling submission Round 2 of PON 3914 in March 2019; Awards are expected to begin being made in Q3 2019, after which NYSERDA will contract with the awardees.

Near-Term Milestones for Energy Related Environmental Research

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Projects contracted from solicitations.	Contracting for the Metocean solicitation is complete. Contracting for three of the seven projects selected under PON 3921: Energy-Related Air Quality Health Effects Research is complete; contracting for the remaining projects is in process and nearing completion.
	2019	Solicitations issued for research projects consistent with the research plan.	PON 4082, Environmental and Fisheries Research for Offshore Wind Energy Development, was released in March 2019. Awardees will be notified of awards in July. Two mini-bids were also released in early Q2 2019 focused on carbon capture, sequestration, and use (CCSU), and planning for climate resilience in NYSERDA programs. A Climate solicitation is being developed based on updates to the Research Plan completed in early 2019. An Offshore Wind Fisheries Liaison solicitation is being developed for release in Q3 2019.
	2019	Outreach, technology transfer, and briefings to share research findings.	Outreach supported with CEF and other funding sources is ongoing. Dissemination of research findings is ongoing via workshops, briefings, and similar.
	2019	Projects contracted from solicitations.	Awards resulting from PON 4082 are anticipated to be contracted in Q3 2019. Contracting for a project resulting from the CCSU mini-bid is complete. Contracting for the climate resilience mini-bid is complete. Contracting for the Offshore Wind Fisheries Liaison is anticipated in Q3/Q4 2019.

Near-Term Milestones for Energy Storage Technology and Product Development

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Contract projects from second competitive solicitation.	All contracts are complete.
	2019	Review portfolio of activities, solicit market input, and reassess technology challenge areas and targets.	These are ongoing activities which are performed over the course of the year.

Near-Term Milestones for National Offshore Wind Research and Development Consortium

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Consortium communication and outreach strategy approved by consortium CEO.	Draft Consortium communication and outreach strategy is in review pending onboarding of a Consortium Executive Director, expected Q4 2019.
	2019	U.S. manufacturing and data management plans approved by Board of Directors and DOE.	Draft U.S. Manufacturing and Data Management plans are in review.
	2019	Investor and public sponsor outreach strategies approved by Board of Directors.	Public sponsor strategy approved by the Board of Directors and DOE. Investor outreach strategy is in review.

Near-Term Milestones for National Offshore Wind Research and Development Consortium – Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2019	Issue competitive solicitations for initial R&D priorities.	Competitive solicitation for nine Technical Challenge Areas in all three Research Pillars has been released.
	2019	Contract projects selected through initial solicitations.	Project selection is in progress for initial solicitations.
	2019	Update R&D priorities.	R&D Priority update scheduled for Q4 2019.
	2019	Revise competitive solicitations to align with updated R&D priorities.	Competitive solicitation update scheduled for Q4 2019.

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.
- 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). 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).
- 6 The 88 million MWh renewable energy goal is not shown in Figure 2 as it is mainly supported by NY-Sun.
- 7 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 CO₂e/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 CO₂e/MWh previously used, based on analysis of grid emissions at that time.
- 8 Customer Bill Savings are calculated as direct energy bill savings realized by customers participating in NYSERDA's programs.
- 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 \$82.7million or 45% 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 \$67,362,088 or 40% 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 \$15,300,348 or 41 % 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 The launch dates for the ASHP and ARTU are not in alignment with what was presented in the investment plan. NYSERDA will correct these launch dates in a future filing based on guidance from the Department of Public Service.

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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**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@nyserda.ny.gov
nyserda.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