

Clean Energy Fund Quarterly Performance Report through September 30, 2019

Final Report | November 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 September 30, 2019

Final Report

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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, New York State Energy Research and Development Authority (NYSERDA) files a scorecard with the Public Service Commission containing metrics for each investment plan. This data fulfills part of the ordered reporting requirements and is featured in the public NY Clean Energy Dashboard, along with metrics data for utility programs. Over time, NYSERDA anticipates that this report will evolve to focus on higher level summary and qualitative progress information not contained in the scorecard 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 September 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 September 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 trillion British thermal units (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 complete carbon-neutrality 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 greenhouse gas (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:

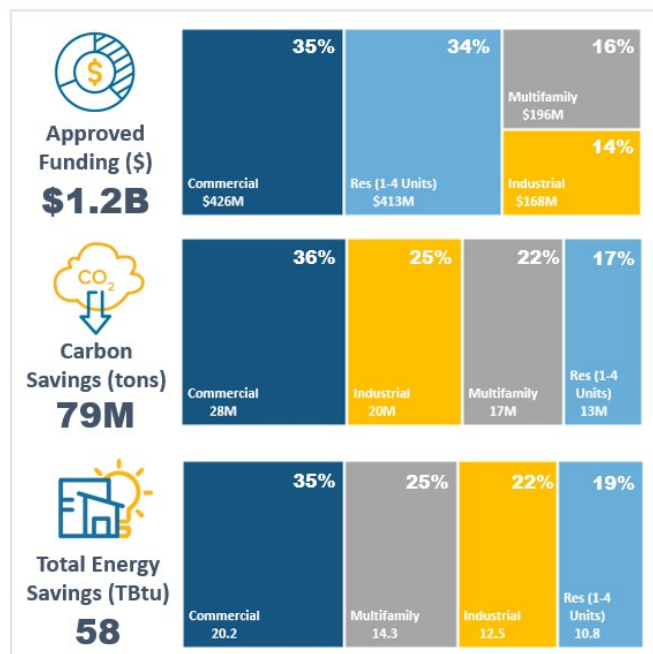
- Six thousand megawatts (MW) of solar by 2025
- Seventy percent renewable electricity by 2030
- Nine thousand MW of offshore wind by 2035
- Carbon-free electricity by 2040

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 September 30, 2019 comprise more than \$1.2 billion of investment in energy efficiency across the commercial, residential, multifamily, and industrial sectors.⁵ These approved investments in energy efficiency are expected to drive nearly 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 Sep. 2019.



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

The CEF offers solutions that will accomplish the following:

- Drive significant carbon emissions reductions related to energy efficiency targets
- Deliver billions of dollars in customer bill savings over the life of the CEF
- Accelerate growth of the State’s clean energy economy
- Mobilize investment, leveraging \$29 billion over the life of the CEF
- 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 September 30, 2019 and accounts for overlap across portfolios where it occurs.

Figure 1. CEF Portfolio Expected Investment and Benefits

Toward 10-year minimum goals as of September 30, 2019 (millions).⁶

CEF Expected Investment and Benefits vs 10-Year Minimum Goals (as of September 30, 2019)
Market Development - Innovation & Research - NY Sun - NY Green Bank

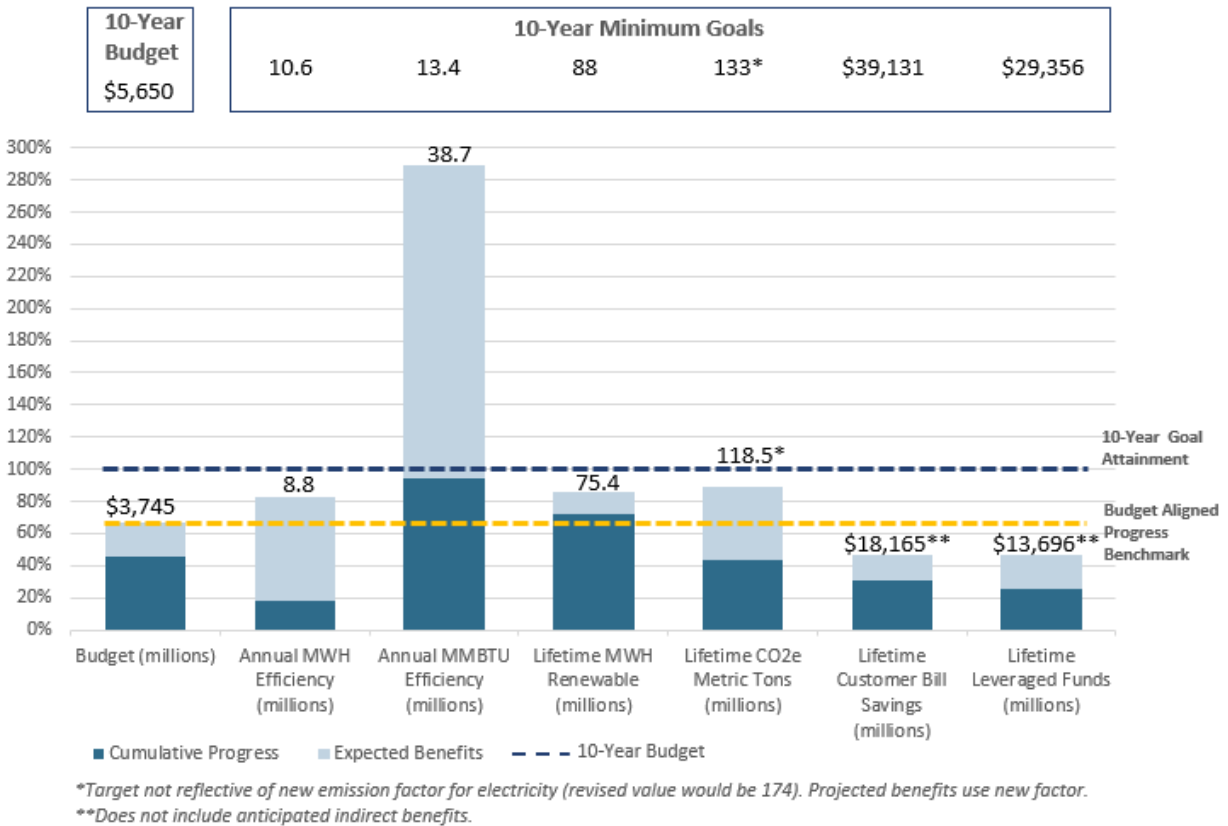


Figure 1 illustrates that deployment of funds is well-aligned with energy and carbon KPI progress at this time. Here, the value Cumulative Progress (committed budgets and benefits) is combined with Expected Benefits (approved but not yet committed budgets and benefits) to demonstrate total progress toward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

Progress remains on track with the Energy Efficiency Portfolio Standard’s 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

While performance appears low at this time for metrics relating to the customer (participant) bill savings⁸ and lifetime leveraged funds, these metrics are not yet inclusive of estimated indirect benefits expected to occur (and be measured) later in the 10-year life of the portfolio. NYSERDA has begun baseline and follow-up market measurements in order to quantify indirect benefits and expects the addition of these currently unaccounted for benefits to raise overall performance up to a level that tracks well against the overall goals.

Composition and Management of MD and I&R Portfolios

Through September 2019, 67 MD and I&R initiatives were developed by NYSERDA and filed with the Public Service Commission, of which 63 initiatives are considered active, engaging the marketplace. Following the release of the CEF Order, NYSERDA introduced 41 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

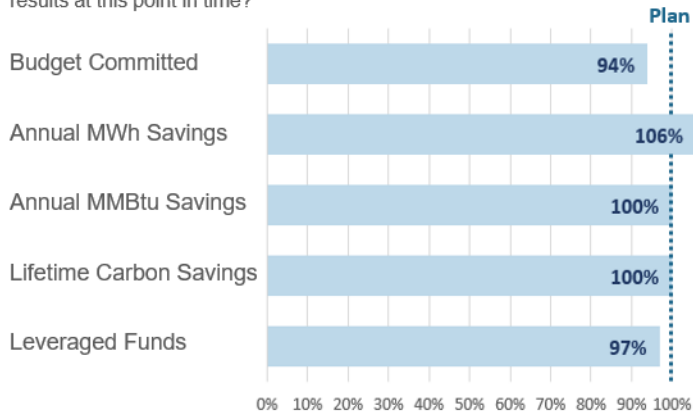
NYSERDA closely monitors MD and I&R portfolio performance, specifically measuring each initiative against its investment plan forecast of budget and benefits over time. NYSERDA's planned benefits through Q3 2019 are defined as 100% of the 2016, 2017, and 2018 annual planned benefits plus 75% of 2019. 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 three quarters of 2019 against the plan for the year. Specifically, the majority of initiatives are in the market and considered performers. Of those monitored, several are expected to show strong progress in Q4 while others are evaluating appropriate corrective actions.

MD and I&R Portfolio Performance-To-Plan

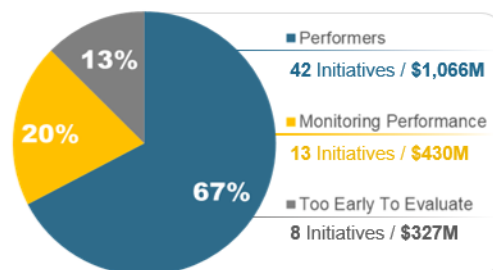
How does performance to date compare with the projected/forecasted results at this point in time?



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.



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

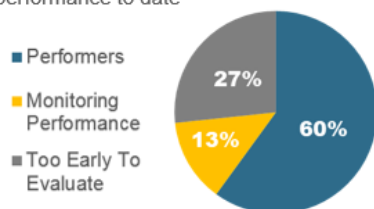
Achieving greater impact per ratepayer dollar involves experimentation with intervention approaches with tolerance for failure provided it is addressed swiftly and the portfolio is on track to meet long-term outcomes. Accordingly, NYSERDA is using a test-measure-adjust approach to be as responsive to 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 remains aligned with design and management expectations.

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 35% of the approved budget. These top contributors also include a very strong focus on energy efficiency, not unlike the majority of CEF programs.

Top 15 Performance

Categorizing the status of the largest carbon savings initiatives within the portfolio in relationship to planned performance to date



Top 15 Carbon Impact



Although NYSERDA closely manages the performance of all the initiatives in the portfolio, these top 15 initiatives are worthy of special attention due to the weight they carry in terms of the overall success of the CEF in delivering expected benefits. This section of the overview ranks the initiatives from largest to smallest expected CO₂e contribution within the three status categories previously introduced: Performers (Table 1), Monitoring Performance (Table 2), and Too Early to Evaluate (Table 3).

The composition of performance status across the top 15 programs has evolved moderately year-to-date, but continues to show that most programs vital to NYSERDA’s ability to deliver expected benefits are making strong progress against their plans. Performance shown in the following tables is reflective of progress against three 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%	106%	106%	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%	85%	189%	Market interest and uptake of Real-Time Energy Management (RTEM) is very promising. Adoption rates in commercial office and multifamily buildings are strong, with the program exceeding total 2019 plans in the first three quarters of the year. 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 achieved by these projects.
Workforce Development Industry Partnerships	7%	82%	71%	Although progress toward 2019 plans is trending downward in Q3, this lull in progress was anticipated given program cadence and timing of awards, and the program continues to execute plans for the year, anticipating a strong finish to 2019.
Clean Energy Communities ⁹	6%	207%	120%	This initiative continues its track record of strong performance. In total for CEF participants, 503 communities completed 1,301 High-Impact Actions. NYSERDA is in the process of developing an Investment Plan update to build on success to date and better serve communities interested in taking advanced action beyond the original program design.
Continuous Energy Improvement	4%	86%	151%	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. NYSERDA is actively recruiting process information vendors that have a strong pipeline of industrial customers in NYS to join the RTEM industrial program (EMIS).
Technical Services	4%	163%	207%	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, with the program exceeding total 2019 plans in just the first three quarters of the year. A revised On-site Energy Manager Program solicitation was released in August and a new technical assistance track (FlexTech) that includes industrial and multifamily remains planned for Q4 2019.
Electric Vehicles - Rebate	3%	85%	86%	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.

Table 1 continued

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	
REV Campus Challenge	2%	126%	122%	The initiative is seeing good market uptake, exceeding its membership (participation) goals to date. Clean energy benefits from all member activities continues to be strong.
P-12 Schools	2%	91%	86%	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.

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	
Commercial and Industrial Carbon Challenge	6%	18%	48%	The Commercial/Industrial Carbon Challenge issued one round for 2019 and expects awards to be pre-encumbered in Q4 2019. It is anticipated that the program will finish 2019 at around 80% of its plan due to the lower projected funding commitment for 2019, with analysis now underway aimed at increasing market interest, adjusting activities to yield benefits in 2020.
LMI Multifamily	3%	87%	78%	Program intake has slowed in Q3 of 2019. Program staff have been performing outreach to stakeholders and will host the program's annual Multifamily Summit in October. Based on what has been learned from this outreach, the program will evaluate if any program change is needed and will adapt marketing and outreach to potential participants.

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%	120%	109%	This program currently features elements focused on both product standards and heat pumps. Research on product and appliance standards that represents the majority of planned carbon impact for the program continues, although still early in activity. The Air Source Heat Pump component of the program is performing as expected. NYSERDA intends to move the Clean Heating and Cooling components of this program over to that chapter 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 (PON) to provide funding to support the implementation of some of these solutions. A first application was received in the first quarter of 2019. Construction for this project has started and is expected to be completed by the end of 2020.
New Construction - Market Rate	6%	8%	24%	This Market Rate component of the New Construction program remains in the early stages of launching critical components (Buildings of Excellence, Net Zero) and is operated in concert with the LMI component. With the first round of Buildings of Excellence awards constituting a higher proportion of funding committed to LMI projects than planned, it is anticipated that the Market Rate program will finish 2019 around 75% to the plan's expected progress. Collectively the program will reach >90% of overall 2019 plan, and NYSERDA will explore some program refinements for 2020.
Code to Zero	2%	140%	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 (quantity) is higher than expected as the training schedule has been adjusted 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 in Tables 5, 6, and 7 of the report. A detailed summary concludes this overview with benefit progress through September 30, 2019—both annual (Table 8) and lifetime (Table 9).

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

See endnote section for more information.¹⁰

Initiative	Total Budget ^a	Budget Approved as of Sept 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	\$1,537,586,262	64%	\$327,547,514	\$387,912,686	\$715,460,200	47%	\$822,126,062
Innovation & Research								
Program Funds								
NYS Cost Recovery Fee	\$631,672,000	\$364,905,510	58%	\$47,578,946	\$90,388,200	\$137,967,146	38%	\$226,938,364
Administration	\$274,400,000	\$170,530,558	62%	\$85,282,249	\$88,610	\$85,370,858	50%	\$85,159,700
Evaluation	\$130,200,000	\$58,898,825	45%	\$3,734,443	\$5,191,138	\$8,925,581	15%	\$49,973,244
Total	\$3,430,000,000	\$2,131,921,155	62%	\$464,143,151	\$483,580,634	\$947,723,785	44%	\$1,184,197,370

^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 September 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 categories Expended and Committed Funds

^g Percentage of the committed budget

^h Difference between categories Budget Approved Funds and Committed Funds

2 Resource Acquisition Transition Initiative Specific Progress

Table 5. Resource Acquisition Transition Initiative Level Budgets and Spending

See endnote section for more information.¹¹

Initiative	Budget Approved as of Sept 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	\$5,915,291	\$5,905,983	\$11,821,274	93%	\$830,192
Industrial Transition	\$68,908,453	\$22,542,652	\$37,384,041	\$59,926,693	87%	\$8,981,760
Agriculture Transition	\$3,600,000	\$3,576,804	\$10,516	\$3,587,320	100%	\$12,680
Multifamily Market Rate Transition	\$156,573	\$156,214	-	\$156,214	100%	\$359
Single Family Market Rate Transition	\$24,335,189	\$20,079,322	\$1,364,964	\$21,444,286	88%	\$2,890,903
Commercial New Construction Transition	\$30,683,999	\$3,435,339	\$19,641,580	\$23,076,919	75%	\$7,607,080
Low Rise New Construction Transition - Market Rate	\$4,837,000	\$2,546,877	\$1,695,663	\$4,242,540	88%	\$594,460
Multifamily New Construction Transition - Market Rate	\$2,734,000	\$747,598	\$1,408,894	\$2,156,492	79%	\$577,508
Anaerobic Digesters Transition	\$20,150,000	\$941,707	\$12,940,593	\$13,882,300	69%	\$6,267,700
Small Wind Transition	\$6,090,000	\$2,563,551	\$601,530	\$3,165,081	52%	\$2,924,919
Solar Thermal Transition	\$298,805	\$287,513	\$38,850	\$326,363	109%	(\$27,558)
Combined Heat & Power Transition	\$71,550,000	\$13,460,649	\$50,881,114	\$64,341,763	90%	\$7,208,237
TOTAL	\$245,995,485	\$76,253,517	\$131,873,727	\$208,127,244	85%	\$37,868,241

^a Funds approved by DPS as of September 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 categories Expended and Committed Funds

^e Percentage of the committed budget

^f Difference between categories Budget Approved Funds and Committed Funds

3 Market Development Initiative Specific Results

Table 6. Market Development Initiative Budgets and Spending

See endnote section for more information.^{12,13,14}

Initiative	Budget Approved as of Sept 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	\$6,910,644	\$2,516,060	\$9,426,704	46%	\$11,223,296
Commercial Chapter						
Energy Management Technology	\$66,605,000	\$7,138,054	\$29,831,444	\$36,969,498	56%	\$29,635,502
Real Estate Tenant	\$25,499,999	\$4,157,576	\$3,741,584	\$7,899,160	31%	\$17,600,839
REV Campus Challenge	\$21,650,002	\$2,139,011	\$5,356,348	\$7,495,359	35%	\$14,154,643
P-12 Schools	\$21,600,000	\$638,916	\$3,487,243	\$4,126,159	19%	\$17,473,841
Commercial Chapter Total	\$135,355,001	\$14,073,557	\$42,416,619	\$56,490,176	42%	\$78,864,825
Industrial Chapter						
Continuous Energy Improvement	\$17,539,000	\$4,755,518	\$3,221,827	\$7,977,345	45%	\$9,561,655
Industrial Chapter Total	\$17,539,000	\$4,755,518	\$3,221,827	\$7,977,345	45%	\$9,561,655
Communities Chapter						
Clean Energy Communities	\$14,218,527	\$4,947,773	\$8,203,112	\$13,150,885	92%	\$1,067,642
Community Energy Engagement	\$4,407,818	\$2,045,649	\$2,345,231	\$4,390,880	100%	\$16,938
Communities Chapter Total	\$18,626,345	\$6,993,422	\$10,548,343	\$17,541,765	94%	\$1,084,580
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	\$5,964,150	\$4,032,727	\$9,996,877	100%	\$3,123
Large-Scale Renewables Chapter Total	\$15,000,000	\$10,882,535	\$4,114,342	\$14,996,877	100%	\$3,123
REV Technical Assistance Chapter						
REV Connect	\$3,000,000	\$2,717,176	\$226,899	\$2,944,075	98%	\$55,925
REV Technical Assistance Chapter Total	\$3,000,000	\$2,717,176	\$226,899	\$2,944,075	98%	\$55,925
Energy Storage Chapter						
Reducing Barriers to Distributed Deployment	\$24,450,000	\$5,284,885	\$6,561,440	\$11,846,325	48%	\$12,603,675
Solar Plus Energy Storage	\$40,000,000	-	\$39,984,299	\$39,984,299	100%	\$15,701
Energy Storage Chapter Total	\$64,450,000	\$5,284,885	\$46,545,739	\$51,830,624	80%	\$12,619,376
Clean Transportation Chapter						
Electric Vehicles - Rebate	\$39,500,000	\$18,503,991	\$1,270,563	\$19,774,554	50%	\$19,725,446
Clean Transportation Chapter Total	\$39,500,000	\$18,503,991	\$1,270,563	\$19,774,554	50%	\$19,725,446

Table 6 continued

Initiative	Budget Approved as of Sept 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	\$4,065	\$2,549,983	\$2,554,048	68%	\$1,205,952
Agriculture Chapter Total	\$8,760,000	\$963,957	\$6,590,091	\$7,554,048	86%	\$1,205,952
Low- to Moderate-Income Chapter						
Healthy Homes Feasibility Study	\$212,147	\$170,315	\$41,832	\$212,147	100%	-
LMI Multifamily	\$53,834,420	\$4,111,280	\$16,461,286	\$20,572,566	38%	\$33,261,854
Single Family - Low Income	\$169,760,983	\$88,285,256	\$1,596,459	\$89,881,715	53%	\$79,879,268
Single Family - Moderate Income	\$59,500,878	\$33,940,134	\$926,341	\$34,866,475	59%	\$24,634,403
Low-Income Forum on Energy	\$1,300,000	\$262,512	\$143,526	\$406,038	31%	\$893,962
RetrofitNY - LMI	\$30,503,500	\$1,274,623	\$2,883,732	\$4,158,355	14%	\$26,345,145
REVitalize	\$725,000	\$232,846	\$78,028	\$310,874	43%	\$414,126
New Construction - LMI	\$24,784,800	\$516,931	\$13,353,569	\$13,870,500	56%	\$10,914,300
Solar For All	\$21,245,000	\$966,721	\$11,545,059	\$12,511,780	59%	\$8,733,220
Low Rise New Construction Transition - LMI	\$8,487,000	\$2,763,251	\$5,185,764	\$7,949,015	94%	\$537,985
Multifamily New Construction Transition - LMI	\$10,879,000	\$1,593,083	\$9,409,058	\$11,002,141	101%	(\$123,141)
NYS Healthy Homes Value Based Payment Pilot	\$9,813,654	-	\$2,943,654	\$2,943,654	30%	\$6,870,000
Low- to Moderate-Income Chapter Total	\$391,046,382	\$134,116,952	\$64,568,308	\$198,685,260	51%	\$192,361,122
Workforce Development and Training Chapter						
Workforce Development Industry Partnerships	\$21,345,000	\$2,976,539	\$6,183,882	\$9,160,421	43%	\$12,184,579
Clean Technology and Energy Efficiency Talent Pipeline	\$47,000,000	\$547,688	\$4,471,415	\$5,019,103	11%	\$41,980,897
Workforce Development and Training Chapter Total	\$68,345,000	\$3,524,227	\$10,655,297	\$14,179,524	21%	\$54,165,476
Renewable Heating and Cooling						
Heat Pumps and Solar Thermal	\$47,211,685	\$14,063,102	\$14,755,913	\$28,819,015	61%	\$18,392,670
Renewable Heat NY	\$13,487,000	\$5,182,178	\$1,508,074	\$6,690,252	50%	\$6,796,748
Renewable Heating and Cooling Total	\$60,698,685	\$19,245,280	\$16,263,987	\$35,509,267	59%	\$25,189,418
Clean Energy Products Chapter						
Underutilized Product Support	\$46,465,000	\$11,921,453	\$1,411,858	\$13,333,311	29%	\$33,131,689
Clean Energy Products Chapter Total	\$46,465,000	\$11,921,453	\$1,411,858	\$13,333,311	29%	\$33,131,689
Multi-Sector Solutions Chapter						
Soft Cost Challenge	\$10,000,000	\$120,784	-	\$120,784	1%	\$9,879,216
Technical Services	\$36,293,312	\$1,424,296	\$10,000,270	\$11,424,566	31%	\$24,868,746
Commercial and Industrial Carbon Challenge	\$75,222,650	\$206,440	\$8,055,931	\$8,262,371	11%	\$66,960,279
Clean Energy Siting and Soft Cost Reduction	\$8,795,000	\$375,633	\$510,197	\$885,830	10%	\$7,909,170
Pay for Performance	\$55,756,709	\$516,512	\$2,643,367	\$3,159,879	6%	\$52,596,830
Information Products and Brokering	\$8,500,000	\$77,226	\$343,112	\$420,338	5%	\$8,079,662
Consumer Awareness	\$5,276,900	-	-	-	-	\$5,276,900
Multi-Sector Solutions Chapter Total	\$199,844,571	\$2,720,891	\$21,552,877	\$24,273,768	12%	\$175,570,803

Table 6 continued

Initiative	Budget Approved as of Sept 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	\$1,056,417	\$890,200	\$1,946,617	9%	\$19,053,383
Codes Chapter Total	\$21,000,000	\$1,056,417	\$890,200	\$1,946,617	9%	\$19,053,383
On-Site Power Chapter						
Fuel Cells	\$15,000,000	\$73,350	\$4,211,000	\$4,284,350	29%	\$10,715,650
On-Site Power Chapter Total	\$15,000,000	\$73,350	\$4,211,000	\$4,284,350	29%	\$10,715,650
New Construction Chapter						
New Construction - Market Rate	\$124,264,632	\$1,021,406	\$16,165,437	\$17,186,843	14%	\$107,077,789
New Construction Chapter Total	\$124,264,632	\$1,021,406	\$16,165,437	\$17,186,843	14%	\$107,077,789
Residential Chapter						
Engaging New Markets	\$15,988,015	\$1,639,558	\$2,869,510	\$4,509,068	28%	\$11,478,947
Residential Chapter Total	\$15,988,015	\$1,639,558	\$2,869,510	\$4,509,068	28%	\$11,478,947
NYS Cost Recovery Fee Market Development	\$26,058,146	\$4,888,780	-	\$4,888,780	19%	\$21,169,366
Total Market Development	\$1,291,590,777	\$251,293,999	\$256,038,957	\$507,332,956	39%	\$784,257,821

* Totals may not sum exactly due to rounding

a Funds approved by DPS as of September 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 categories Expended and Committed Funds

e Percentage of the committed budget

f Difference between categories Budget Approved Funds and Committed Funds

4 Innovation and Research Initiative Specific Results

Table 7. Innovation and Research Initiative Level Budgets and Spending

See endnote section for more information.^{15,16}

Initiative	Budget Approved as of Sept 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	\$2,337,593	\$605,644	\$2,943,237	47%	\$3,356,763
High Performing Electric Grid	\$110,500,000	\$6,744,397	\$16,653,934	\$23,398,331	21%	\$87,101,669
Power Electronics Manufacturing Consortium	\$16,700,000	\$16,700,000	-	\$16,700,000	100%	-
Grid Modernization Chapter Total	\$133,500,000	\$25,781,990	\$17,259,578	\$43,041,568	32%	\$90,458,432
Innovation Capacity and Business Development Chapter						
CleanTech Startup Growth	\$58,200,000	\$8,783,809	\$28,094,787	\$36,878,596	63%	\$21,321,404
Manufacturing Corps	\$12,000,000	\$2,180,241	\$2,083,000	\$4,263,241	36%	\$7,736,759
Novel Business Models and Offerings	\$16,100,000	\$474,689	\$4,268,600	\$4,743,289	29%	\$11,356,711
Innovation Capacity and Business Development Chapter Total	\$86,300,000	\$11,438,739	\$34,446,387	\$45,885,126	53%	\$40,414,874
Building Innovation Chapter						
NextGen HVAC	\$15,000,000	\$1,425,987	\$7,047,835	\$8,473,822	56%	\$6,526,178
Building Innovation Chapter Total	\$15,000,000	\$1,425,987	\$7,047,835	\$8,473,822	56%	\$6,526,178
Clean Transportation Chapter						
Electric Vehicles - Innovation	\$11,850,000	\$1,868,849	\$6,079,002	\$7,947,851	67%	\$3,902,149
Public Transportation and Electrified Rail	\$18,500,000	\$508,880	\$3,871,028	\$4,379,908	24%	\$14,120,092
Clean Transportation Chapter Total	\$30,350,000	\$2,377,729	\$9,950,030	\$12,327,759	41%	\$18,022,241
Energy-Related Environmental Research Chapter						
Energy-Related Environmental Research	\$37,800,000	\$2,788,154	\$10,802,211	\$13,590,365	36%	\$24,209,635
Energy-Related Environmental Research Chapter Total	\$37,800,000	\$2,788,154	\$10,802,211	\$13,590,365	36%	\$24,209,635
Renewables Optimization Chapter						
Energy Storage Technology and Product Development	\$33,000,000	\$1,560,211	\$7,685,473	\$9,245,684	28%	\$23,754,316
National Offshore Wind Research & Development Consortium	\$22,500,000	\$1,569,742	\$3,196,686	\$4,766,428	21%	\$17,733,572
Renewables Optimization Chapter Total	\$55,500,000	\$3,129,953	\$10,882,159	\$14,012,112	25%	\$41,487,888
NYS Cost Recovery Fee Innovation & Research	\$6,205,510	\$635,741	-	\$635,741	10%	\$5,569,769
Innovation Capacity and Bus. Dev. Chapter Total	\$364,905,510	\$47,578,946	\$90,388,200	\$137,967,146	38%	\$226,938,364

Table notes are on the next page

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

Table 8. Market Development and Innovation and Research Portfolio

Committed Benefits Progress to Date—Annual

See endnote section for more information.¹⁷

Initiative	Completed Projects through June 30, 2019 with Adjustments	Completed Projects through 7/1/19 - 9/30/19	Total Completed Projects through Sept 30, 2019	Current Pipeline Through Sept 30, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Planned Benefits Through Q3 2019	% of Cumulative Annual Planned Benefits Through Q3 2019	Total Cumulative Annual Planned Benefits through 2025	% of Total Cumulative Annual Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	385,038	68,642	453,679	1,496,024	1,949,703	1,847,202	106%	3,721,107	52%
Energy Efficiency (MMBtu)	5,883,434	922,061	6,805,494	5,765,307	12,570,801	12,585,435	100%	25,529,827	49%
Energy Efficiency (MW)	16	0.4	17	116	133	*	-	*	-
Renewable Energy (MWh)	126,323	44,572	170,895	70,749	241,644	*	-	*	-
Renewable Energy (MW)	168	38	206	4	209	*	-	*	-
CO2e Reductions (metric tons)	897,133	104,000	1,001,133	962,910	1,964,044	*	-	*	-
Customer Bill Savings (\$ million)	\$115.75	\$23.82	\$139.57	\$243.53	\$383.09	*	-	*	-
Leveraged Funds (\$ million)	\$908.87	\$103.64	\$1,012.51	\$1,540.28	\$2,552.79	*	-	*	-
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)	\$265.21	\$56.94	\$322.15	\$424.75	\$746.90	*	-	*	-
Total Energy Efficiency (MWh)	385,038	68,642	453,679	1,496,024	1,949,703				
Total Energy Efficiency (MMBtu)	5,883,434	922,061	6,805,494	5,765,307	12,570,801				
Total Energy Efficiency (MW)	16.4	0.4	17	116	133				
Total Renewable Energy (MWh)	126,323	44,572	170,895	70,749	241,644				
Total Renewable Energy (MW)	168	38	206	4	209				
Total CO2e Reductions (metric tons)	897,133	104,000	1,001,133	962,910	1,964,044				
Total Customer Bill Savings (\$ million)	\$115.75	\$23.82	\$139.57	\$243.53	\$383.09				
Total Leveraged Funds (\$ million)	\$1,174.08	\$160.58	\$1,334.66	\$1,965.03	\$3,299.69				

* Metric to be tracked and reported, although 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 June 30, 2019 with Adjustments	Completed Projects through 7/1/19 - 9/30/19	Total Completed Projects through Sept 30, 2019	Current Pipeline Through Sept 30, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Lifetime Planned Benefits Through Q3 2019	% of Cumulative Lifetime Planned Benefits Through Q3 2019	Total Cumulative Lifetime Planned Benefits through 2025	% of Total Cumulative Lifetime Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	5,863,965	909,748	6,773,713	20,753,942	27,527,655	*	-	*	-
Energy Efficiency (MMBtu)	91,430,122	12,532,392	103,962,514	81,907,255	185,869,769	*	-	*	-
Renewable Energy (MWh)	881,169	367,265	1,248,434	817,803	2,066,237	2,625,938	79%	4,327,791	48%
CO2e Reductions (metric tons)	13,166,974	1,275,498	14,442,472	12,555,228	26,997,701	26,963,500	100%	51,909,541	52%
Customer Bill Savings (\$ million)	\$1,609.82	\$292.20	\$1,902.01	\$3,275.22	\$5,177.23	\$4,889.58	106%	\$10,330.89	50%
Leveraged Funds (\$ million)	\$908.87	\$103.64	\$1,012.51	\$1,540.28	\$2,552.79	\$2,646.04	96%	\$6,604.46	39%
Innovation and Research									
Energy Efficiency (MWh)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MMBtu)	-	-	-	-	-	*	-	*	-
Renewable Energy (MWh)	-	-	-	-	-	*	-	*	-
CO2e Reductions (metric tons)	-	-	-	-	-	*	-	*	-
Customer Bill Savings (\$ million)	-	-	-	-	-	*	-	*	-
Leveraged Funds (\$ million)	\$265.21	\$56.94	\$322.15	\$424.75	\$746.90	\$752.38	99%	\$1,615.21	46%
Total Energy Efficiency (MWh)	5,863,965	909,748	6,773,713	20,753,942	27,527,655	-	-	-	-
Total Energy Efficiency (MMBtu)	91,430,122	12,532,392	103,962,514	81,907,255	185,869,769	-	-	-	-
Total Renewable Energy (MWh)	881,169	367,265	1,248,434	817,803	2,066,237	-	-	-	-
Total CO2e Reductions (metric tons)	13,166,974	1,275,498	14,442,472	12,555,228	26,997,701	-	-	-	-
Total Customer Bill Savings (\$ million)	\$1,609.82	\$292.20	\$1,902.01	\$3,275.22	\$5,177.23	-	-	-	-
Total Leveraged Funds (\$ million)	\$1,174.08	\$160.58	\$1,334.66	\$1,965.03	\$3,299.69	-	-	-	-

* Metric to be tracked and reported, although 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 590 tenant sites are enrolled in the program. The projects have 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 drive deeper energy savings in tenant spaces, as well as engage more portfolio owners in the program. There are currently 19 portfolios and multisite projects 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. Through outreach, NYSERDA is focused on engaging building owners and portfolios specifically, which can benefit from this more standardized approach to identifying energy savings and engaging a broader array of tenants, both existing and prospective.
	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 just launched a new PON to engage them in the process (The Commercial Broker Referral Program). Large property management companies and portfolio owners are another group that NYSERDA is targeting as well. And we continue to reach out to the architecture and design community, who are key influencers in this process.

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.	Different use cases of 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. NYSERDA is seeing more leasing departments becoming interested and looking to better understand in the topic.
	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 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 or showroom space.
	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 began in Q3 2019.
	2018–2024	NYSERDA confirms economic savings/value while presenting soft cost (i.e., productivity) opportunities as additional benefits to the market.	NYSERDA has begun an impact evaluation of the savings/value of the Commercial Tenant program 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.
	2020	Industry adopts standardized methodologies for calculating, analyzing, and reporting costs and savings data.	NYSERDA is Integrating data standardization via Project Haystack into program language and advising RTEM Vendors/Stakeholders on the use cases and importance.
	2020	RTEM vendors begin to use RTEM incentives to support investments in grid-integrated buildings.	RTEM vendors are beginning to use RTEM incentives to support customer investments in grid-integrated buildings.
	2020	RTEM vendors begin to use RTEM incentives to offer small and medium building owners RTEM subscriptions with no upfront cost.	A number of RTEM vendors are currently offering New York State customers no upfront-cost RTEM subscriptions.
	2020	NYSERDA releases publicly available aggregated data sets of RTEM projects.	NYSERDA is working to collect and organize RTEM project data sets.
	2020	NYSERDA issues challenge to entrepreneurs and innovators to explore RTEM data sets to advance efforts at demand reduction and peak load shaping.	

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 118 institutions signed up as of the end of Q3 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.	REV Campus Challenge annual workshops were held in June 2019, with four members hosting. They had the opportunity to discuss on-campus projects and have students present. 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. 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. Several member spotlights are finalized and will be posted to the REV Campus Challenge website by end of 2019.
	2020-2022	140 out of 250 institutions sign up to be REV Campus Challenge Members.	The REV Campus Challenge has 118 institutions signed up as of the end of Q3 2019.
	2020-2022	Members continue to make progress and receive recognition as demonstrated by new and revised planning, new commitments to sustainability goals and clean energy projects started and completed.	There is a pipeline of 16 member spotlights in development, with a minimum of 6 spotlights to be published by the end of 2019.
	2020-2022	15% more NYS institutions participate in clean energy commitment opportunities, conferences/events, peer groups, etc., building a strong support network.	This will be updated once the 2019 annual survey results are analyzed. Initial results expected in Q4 2019.
	2020-2022	Annual/Semi-annual survey of Member institutions provides feedback on clean energy progress and changes in overall campus, student, and community mindset.	The annual survey will close in Q4 2019.

Near-Term Milestones for P-12 Schools

Complete ✓	Time Frame	Milestone	Explanation of Progress
	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 Q4 2019.
	2020	Assess participation and seek feedback on gap assistance funding program; identify any needed changes.	The gap assistance funding, Green and Clean Energy Solutions, is expected to launch in Q4 2019. Participation and feedback will be assessed in 2020.
	2020	Distribute first annual survey for schools to provide feedback on clean energy progress specific to energy use intensity and greenhouse gas emissions data, projects and recognition.	NYSERDA plans to launch the survey in Q3 2020.

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 roadmaps will be developed for each project and distributed to the market. Six case studies and roadmaps have been approved to date; four have been distributed to the market via the NYSERDA webpage.
	2018	Successful dissemination of training, roadmaps, 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 and second cohorts' 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.	Total identified savings for the 2017 Cohort consist of 6,132 MWh (3%) and 23,199 MMBtu (6%). Total identified savings for the 2018 Cohort consist of 22,761 MWh (5%) and 11,167 MMBtu (6%). For the 2018 Waste Water Cohort, total identified savings consists of 13,090 MWh and 1,158 MMBtu.

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
	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 with a Q3 due date. NYSERDA anticipates contract modifications for the regional pilots will be complete late 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 early 2020. 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 mid-to-late 2020.
	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 were deployed in mid-2019 to measure wind, wave, and other data. They will be active in the New York bight for approximately two years and will be used to the generate reports on site-specific data.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Market segmentation for NYSEERDA customer acquisition activities supported under this investment plan expands beyond the initial segments of interval-metered customers.	Feasibility study funding under the FlexTech program and outreach activities are ongoing for a wide array of demand metered customer segments.

Near-Term Milestones for Solar Plus Energy Storage

Complete ✓	Time Frame	Milestone	Explanation of Progress
	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, which is anticipated from Q4 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.
	2020	Participation in IPWG and ITWG meetings throughout the year to address issues of adding storage to solar.	Participation in these working groups continue as energy storage interconnection challenges are addressed, including when paired with a solar.

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 submitted the initial business plan Q2 2018. It is anticipated that the business plan will be updated on an annual basis.
	2018	Monitor small (6,000 square feet) pilot demonstration of a basic light and shade control system.	Construction of electronics boxes for small pilot facility is nearly complete. Lighting and Shade System Implementation (LASSI) control system will be installed in Q4 2019.
	2018	Publish case study of demonstration.	The case study will be published once the demonstration data has been collected and analyzed.
	2019	Monitor small (6,000 square feet) pilot demonstration of CO ₂ supplementation integrated with the light and shade control system.	Monitoring of the system with CO ₂ supplementation will occur once the data collection from the LASSI system is complete.
	2019	Monitor large (20,000 square feet) pilot demonstration of a basic light and shade control system.	LASSI control system will be installed in Q4 2019. Monitoring of the system with CO ₂ supplementation will occur once the data collection from the LASSI system is complete.
	2019	Publish case study of demonstrations.	The case study will be published once the demonstration data has been collected and analyzed.
	2020	Monitor small (6,000 square feet) pilot demonstration of efficient LED lights integrated with CO ₂ supplementation and light and shade control system.	Monitoring of the system with efficient LED lights integrated with CO ₂ supplementation and the LASSI system will occur once the data collection from the CO ₂ supplementation and LASSI system is complete.
	2020	Monitor large (20,000 square feet) pilot demonstration of CO ₂ supplementation integrated with the light and shade control system.	
	2020	Publish case study of demonstration.	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 have been recommended for funding. Two contracts have been approved and the other two contracts are under negotiation.
	2020	Publish and disseminate business case scenarios that support underused and emerging technology implementation.	Case studies will be developed after completion of projects.

Near-Term Milestones for RetrofitNY—LMI

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	One or more solution 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. NYSEDA released two Program Opportunity Notices (PON) to provide funding to support the implementation of some of these solutions. A first application was received in the first quarter of 2019. Construction for this project has started and is expected to be completed by the end of 2020.
	2020	Solution(s) are adapted to additional building typologies.	The first round of RetrofitNY designs and pilots consists of two typologies: one–three story "garden style" buildings, and four–seven story multifamily buildings. It is anticipated that solutions will be tested on each building type by the end of 2020.
	2020	Financial products that are adapted to affordable housing entities' processes and are compatible with federal and state rules that apply to affordable housing are developed and made available.	The New York State and New York City affordable housing agencies have been engaged and a lender working group has been launched. The six projects selected under NYSEDA's RFP 3750 are enabling the program team to better understand the current financing barriers and what solutions are needed. Some major barriers have been identified and strategies are being developed to remove them.

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.	People United for Sustainable Housing (PUSH) Buffalo is finalizing their focus group research. Sustainable Binghamton's development of a Community Scale Solar project using a subscription model at the scale appropriate to their resources—less than 1MW DC—in NYSEG zone 3, has proven difficult. However, they continue to communicate with the State on various options. WE ACT took the lead on creating a community-based organization CES best practices document. WE ACT sought assistance from the three remaining REVitalize projects.
	2017	Community-scale clean energy project development and implementation started.	Sustainable Binghamton continues to explore development engagement, finance, and ownership options. Sustainable Binghamton hired its technical subcontractor to engage with the community. WE ACT and PUSH continue to engage community/stakeholders.
	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.	WE ACT submitted for approval its Project Work Plan. PUSH and Sustainable Binghamton continue to engage the community/stakeholders and work towards project completion.
	2020	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 for existing implementation services is pending and is expected to be fully executed in Q4 2019.
	2020	Implement a statewide conference in Q2 of 2020.	Conference planning is currently underway.

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 Q4 2019.
	2017	Commencement of pilot activities.	Pilot implementation is expected to begin in Q4 2019.
	2020	Preliminary determination of health benefits and healthcare cost savings.	Contingent on pilot implementation.

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.	Program intake has slowed in Q3 of 2019. Program staff have been performing outreach to stakeholders and will host the program's annual Multifamily Summit in October. Based on knowledge gained from this outreach, the program will evaluate if any program change is needed and will adapt marketing and outreach to potential participants.

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 and measures have been finalized.
	2019	Release of an RFQ to identify healthy homes energy/housing service providers.	RFQ is currently being drafted and is anticipated to be released in Q4 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 value-based payment (VBP) arrangement integration (rolling).	One social determinant of health template is submitted and approved (HealthPlus). Three additional social determinants of health template drafts are in the process of being drafted (one with HealthPlus and two with HealthFirst).
	2020	Preliminary review of progress to date, including assessment of measure frequency and cost, barriers, and opportunities to inform remainder of pilot.	It is expected that this will be completed in Q2 2020 for projects in the field.
	2020	Completion of value-based payment contracting toolkits for MCO/VBP Providers and community-based organizations.	Toolkit planning will begin in Q1 2020.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Contract with awardees for Buildings of Excellence Competition.	The Buildings of Excellence proposals selected for award were approved at the end of Q3. It is anticipated that the contracts for the Buildings of Excellence competition will be completed in Q4 of 2019 and Q1 2020.
	2019	Issue solicitation to launch Simplified Design and Tools: Model Measure Packages activity.	The solicitation will be released in Q4 2019.
	2019	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Contract(s) will follow the release of the solicitation.
	2019	Issue mini-bid for technical reviewers through existing NYSERDA umbrella contracts to begin performance analysis to assess project performance.	The solicitation will be released in Q4 2019.
	2019	Contract with technical reviewers for Performance Analysis to assess project performance.	Contracts will be executed upon selection of a firm from the solicitation.
	2019	Contract with awardees for Simplified Design and Tools: Integrated Design Practices Advisor for first-time Developers.	Primary Energy Consultant's (PEC) are entering into contract with NYSERDA through RFP 3771. This program offers an open enrollment, and contracts eligible to provide mentoring services will be entered on a rolling basis. PEC Mentoring Services are being accessed through NYSERDA's Standard Offer incentive programs, and the contracts for these services are generated at the time of the project-specific award letters. The Portfolio Owner Support program is expected to contract with all program awardees by Q4 2020.
	2020	Issue competitive RFP for Simplified Design and Tools: Online Platform development.	The program expects to release a solicitation or mini-bid (if applicable) to vendors to develop the online platform in Q4 of 2020.
	2020	Contract with awardees for Simplified Design and Tools: Online Platform development.	Contracts with vendors will follow the solicitation.
	2020	Issue second competitive solicitation for Buildings of Excellence Competition.	The second round of the Buildings of Excellence competition is anticipated for release in Q4 2019 in order to extend the time the solicitation is available and increase outreach.
	2020	Contract with awardees for second round of Buildings of Excellence Competition.	Contracts for the second round of the Buildings of Excellence competition will be executed by Q4 2020.

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 Q1 2020.
	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.
	2020	Finalize post-initiative transition strategy.	The finalization of the post-initiative transition strategy is still planned to occur in 2020.

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 were added to the Workforce Development website in Q3 2019.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Issue clean energy training infrastructure and capacity building solicitation, round 2.	The clean energy training infrastructure and capacity building PON was originally issued in October 2018 and was revised in March 2019 and September 2019. There have been six rounds since it was issued with 4 more rounds expected through January 2021.
	2020	Revise and reissue OJT and internship PONs	Both the OJT and Internship PONS were revised and will be reissued in Q4 2019.

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.	This proposed activity is likely to be subsumed in the Statewide Heat Pump implementation plan.
	2019	Disseminate Renewable Heating & Cooling (RH&C) case studies and design and installation best practices to the market.	Currently, developing a marketing and communications strategy to disseminate results of 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.	The Heat Pump and Solar Thermal initiative has been extended until March 31, 2020 and it is anticipated that the utilities will begin managing heat pump incentive programs as of April 1, 2020.
	2020	Close GSHP Rebate program in timing with the launch of the utility statewide heat pump program.	

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 (NESCAUM) on public health studies with an update to be provided in Q4 2019. Cornell is developing an autonomous ambient wood smoke monitor for identification of plumes. Health studies for rural regions have proved problematic due to available tools and relatively few changeouts compared to households that burn wood.
	2018	Contract with manufacturers selected under competitive solicitation.	This will begin once the competitive solicitation has been released and proposals selected. Estimated Q2 2020.
	2019	Issue competitive solicitation to seek proposals from advanced biomass heating equipment manufacturers on technology improvements.	Round 4 of PON 3519 Next Gen HVAC is planned for Q1 2020.
	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 endnote section for more information.¹⁸

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 and is currently being drafted with expected completion in Q4 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 was completed in Q3 2019.
	2018	Issue competitive solicitation to identify and test alternative business models.	The determination was made to support novel business models through NYSERDA's Novel Business Models and Offerings PON.
	2019	Issue open solicitation to expand alternative business models based on results from competitive solicitation in 2018.	The determination was made to support novel business models through NYSERDA's Novel Business Models and Offerings PON.
	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). The Vermont Energy Investment Corporation (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.	It is expected that all Advanced Commercial HVAC system incentive activities will transfer to the joint utilities along with the 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. NYSERDA will be closing this program and reprogramming the funds for other portfolio priorities.

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 and are currently under review.
	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 complete with revised solicitation released in Q3 2019. Review of aggregation pilot in progress. A new/revised solicitation is expected in Q3 2020.
	2020	Disseminate best practices materials.	Expecting to contract for best practices services in 2019 for agriculture and 2020 for commercial, with dissemination of materials starting in 2020.
	2020	Issue revised open enrollment FlexTech Program.	The revised program is expected to launch in Q4 2019.

Near-Term Milestones for Commercial and Industrial Carbon Challenge

Complete ✓	Time Frame	Milestone	Explanation of Progress
	(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.
	2020	Launch a statewide outreach and education campaign to publicize soft cost solutions and technical assistance services, including convening regional meetings for LSR stakeholders.	NYSERDA completed its first Wind Workshop in Q1 of 2019 and conducted outreach for the 2019 Large-Scale Renewables Solicitation in Q2 and Q3 with a total of nearly 40 one-on-one meetings. NYSERDA led Battery Energy Storage Workshops in host towns using the new Battery Energy Storage Guidebook in Q1, Q2, and Q3 of 2019 and will continue to host workshops for Q4. NYSERDA has conducted over 30 workshops in the State.
	2020	Issue the incentive grant solicitation for AHJs taking significant steps to reduce solar soft costs.	Previously on hold, now details and feasibility of a grant solicitation are being revisited for a possible launch in Q2 of 2020. The initial design is to provide Authorities Having Jurisdiction with a grant when they adopt a Payment In-Lieu of Taxes agreement, the Solar Model Law, and the Unified Solar Permit.
	2020	Issue the Soft Cost Innovation solicitation.	NYSERDA is revisiting this soft cost solicitation idea and the framework and details are currently being developed. This plan is to launch by end of Q1 2020.
	2020	Contract with Soft Cost Innovation award recipients.	This is on hold as NYSERDA is focusing on resource development coinciding with NYS renewable goals.

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.	One of two Phase 1 solicitations released. Other solicitation is under review by NYSERDA and Utility Administrator with a scheduled release in early 2020.
	2019	Execute Phase 1 aggregator contracts and begin Phase 1 work.	Contract execution for one Utility Administrator procurement scheduled to be complete by Q2 2020. Contract for other Phase 1 procurement scheduled for completion in 2020.
	2019	Adjust design elements based on market feedback and prepare for Phase 2 solicitations.	Market feedback is continuously being sought. Preparation for one Phase 2 solicitation is underway.
	2020	Initial assessment of Phase 1 customer uptake, aggregator performance, program parameters, and M&V solution after first year of Phase 1 implementation.	No progress can be made until Portfolio Managers are contracted and in market.

Near-Term Milestones for Information Products and Brokering

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Initial Asset Data Pilot(s) are completed.	First pilot may be complete by end of 2019 provided timely sharing of data with NYSERDA for contractor to analyze.
	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 energy efficiency contractors and Pay for Performance aggregators.
	2019	Issue award for the development of value proposition calculator to support adoption of energy efficiency in the small commercial sector.	The solicitation was released in Q3 2019 and the award is expected to be issued in Q4 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.	NYSERDA is sponsoring, along with the Real Estate Board of New York and many building owners, the first hackathon. This event will occur on November 12th and 13th, as part of Real Estate Tech week.
	2019	DER Data Platform pilot is operational.	On track for DER Data Platform to be operational by end of 2019.
	2020	Issue award for the development of customer targeting tool to support adoption of energy efficiency.	Customer targeting tool focused on supporting adoption of heat pumps and energy efficiency in the residential sector is beginning to demonstrate strong market uptake.
	2020	Asset Data Matching pilots and DER Platform pilot testing completed with recommendations.	On track to complete this milestone by end of Q3 2020.
	2020	Issue award for development of value proposition calculator to support adoption of energy efficiency in the residential sector.	On track to complete milestone.
	2020	Roll out customer targeting tools to an additional 100 contractors in the small business and residential energy efficiency markets.	Customer targeting tool focused on residential sector is beginning to demonstrate market uptake. Lessons learned from this effort will be applied to expanded roll out in 2020.
	2020	Drive 5,000 small businesses to the small business Energy Efficiency Value Proposition calculator. Five hundred visitors complete value proposition and request a vendor.	Solicitation for value proposition calculator for small and medium businesses was released in Q3 2019.
	2020	Host second hackathon, with a focus on identifying solutions that overcome barriers to adoption of energy efficiency and clean energy for small-to-medium commercial owners. Attract 175 proposals. Issue one to four awards to support market demonstration of solutions developed by winners.	First hackathon is scheduled for November 2019. Lessons learned will be applied to second hackathon.

Near-Term Milestones for Consumer Awareness

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Develop communication strategy for contractor, manufacturing, and distributor engagement.	Meetings were held with program staff to inventory communications channels in place to engage contractors and distributors.
	2019	Develop public relations and community integration strategy.	Working with Consolidated Edison's community affairs representative and the County Executive office to engage local communities. Meetings with Chambers of Commerce, Professional Organizations, and Municipalities will be held in December 2019 with the goal to persuade these entities to communicate with their constituents.
	2019	Develop landing environment.	Prototype for Small Business has been developed and shared with Con Edison.
	2019	Develop an inbound communications strategy and architecture including appropriate referral destinations and responses for anticipated areas of interest.	Work is underway with Consolidated Edison to map inquiry handling.
	2019	Develop messaging and creative content.	Creative concept has been tested and finalized. Development of first tier messaging is complete. As NYSERDA moves toward implementation, additional versions of the creative for use across channels will be developed.
	2019	Buy and execute media placements.	Campaign timeline has been pushed back to launch of Small Business in February 2020 and general Consumer in March 2020.
	2019	Media and landing environment go live in market.	This will now go live in 2020.
	2019	Measure/analyze assets, adjust to optimize campaign performance.	This will happen at various points during the campaign, starting in 2020.
	2020	Determine need to expand consumer awareness campaign to other geographic areas in the State.	An investment plan will be developed in Q4 to support statewide roll-out.
	2020	Conduct market testing to determine likelihood of success of consumer awareness in any potential new regions.	Completed baseline studies in Brooklyn, Queens, and Long Island.

Near-Term Milestones for Code to Zero

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Issue NY Stretch-Energy stretching off of IECC22 2018.	NYStretch posted on website July 1, 2019. Final NYStretch cost effectiveness analyses reports were completed in August 2019. Issuance will occur in Q4 2019. Final NYStretch cost effectiveness analyses reports completed August 2019. Complete release of NYStretch reports and municipal toolkit no longer dependent on launch of Communities' CEC program. Press release expected in Q4 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. NYSERDA 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 Q4 2019. Solicitation development will begin after release of NYStretch code, cost effectiveness analyses, and toolkit items with projected issuance of solicitation in Q1 2020.

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 roadmap started during Q3 2018; NBI is actively engaged with NYSERDA working on the roadmap. In 2019, the scope of the roadmap expanded from initial focus on new construction to also address existing buildings. The roadmap's goal shifted from zero energy by 2030 to carbon neutral by mid-century, and development extended with release, now scheduled for September 2020.
	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.	A mini-bid was sent to RFQL 3711 A2 contractors for energy code training on the 2020 code update. Proposals were received September 13, 2019 and task work orders will be issued Q4 2019.
	2020	Issue Solicitation to develop NY Stretch-Energy stretching off of IECC2021.	This will occur after a call for ideas and evaluation of proposals for facilitating/code development contractor.
	2020	Contract for development of NY Stretch-Energy (IECC2021).	Contracting will occur after bid request has been released and awards made.

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-six applications have been received and nine 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. Nine 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.	Nine contracts have been issued, and this installation may be operational by June 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.
	2018	Contract with awardees for Simplified Design and Tools: Integrated Design Practices Advisor for first-time Developers.	Primary Energy Consultant's (PEC) are entering into contract with NYSERDA through RFP 3771. This program offers an open enrollment, and contracts eligible to provide mentoring services will be entered on a rolling basis. PEC Mentoring Services are being accessed through NYSERDA's Standard Offer incentive programs, and the contracts for these services are generated at the time of the project-specific award letters. The Portfolio Owner Support program is expected to contract with all program awardees by Q4 2020.
	2019	Contract with awardees for Buildings of Excellence Competition.	The Buildings of Excellence proposals selected for award were approved at the end of Q3. It is anticipated that the contracts for the Buildings of Excellence competition will be completed in Q4 of 2019 and Q1 2020.
	2019	Contract with awardees for second Net Zero Energy Commercial/Carbon Competition	Awards will be announced in December 2019. Contracting will occur after awards announcement, execution of round 2 contracts is expected in early 2020.
	2019	Issue mini-bid for technical reviewers through existing NYSERDA umbrella contracts to begin performance analysis to assess project performance.	The solicitation will be released in Q4 2019.
	2019	Contract with technical reviewers for Performance Analysis to assess project performance.	Contracts will be executed upon selection of a firm from the solicitation.
	2019	Issue solicitation to launch Simplified Design and Tools: Model Measure Packages activity.	A Contracting Memo was approved in Q3 2019 to analyze the building performance of Buildings of Excellence award winners. This analysis will lead to the identification of measures commonly installed together and the resulting building energy performance. The solicitation will be released in Q4 2019.
	2019	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Contract(s) will follow the release of the solicitation.
	2020	Issue competitive RFP for Simplified Design and Tools: Online Platform development.	NYSERDA expects to release a solicitation to vendors to develop the online platform in Q4 of 2020.

Near-Term Milestones for New Construction—Market Rate continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Contract with awardees for Simplified Design and Tools: Online Platform development.	Contracts with vendors will follow the solicitation.
	2020	Issue second competitive solicitation for Buildings of Excellence Competition.	The second round of the Buildings of Excellence competition is anticipated for release in Q4 2019 in order to extend the time the solicitation is available, thereby increasing outreach.
	2020	Contract with awardees for second round of Buildings of Excellence Competition.	Contracts for the second round of the Buildings of Excellence competition will be executed by Q4 2020.
	2020	Issue third solicitation for Net Zero Energy Commercial/Carbon Competition	The third round of the Net Zero Energy for Economic Development competition will be launched in the Consolidated Funding Application in 2020.

Near-Term Milestones for Engaging New Markets

Complete ✓	Time Frame	Milestone	Explanation of Progress
	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 launched in Q3 2019. Milestone should be completed during Q4 2019.
	2020	Implement initial pilot for leveraging relationships that upstream market actors have with contractors.	Early planning work has begun, and planning activities continue.
	2020	Implement initial pilot for providing energy efficiency information to consumers from home improvement retailers and their contractor network.	This program component will be removed in an upcoming modification to the Investment Plan.
	2020	Develop resources, such as templates or toolkits, for market actors to support the business case for incorporating energy efficiency into their business models.	Pilot will require more activity before this work begins.

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.
	2017	Enter into contracts for projects awarded under the targeted competitive solicitation #2.	Solicitation delayed allowing broad competitive solicitation #3 to be issued. Contracting is in process.
	2018	Identify technology gaps necessary to support community grid operation based on completed NY Prize Stage 2 evaluations.	Stage 2 deliverables are complete, and gaps are expected to be identified by Q1 2020.
	2019	Enter into contracts for projects awarded under the targeted competitive solicitation #4.	Contracting is in process.
	2020	Issue targeted competitive solicitation #6.	The solicitation should be released in Q1 2020.
	2020	Enter into contracts for projects awarded under the targeted competitive solicitation #6.	Contracts will be awarded after release of the solicitation.

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 until 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, 2018, and 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, 2018, and 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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Award(s) from solicitation for Proof-of-Concept Centers (POCC) 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 November 2019.
	2019	Award(s) from solicitation for POCC support services contracted.	Milestone will not be completed as support services are no longer necessary.

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	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.	Awards from the third round have been contracted.
✓	2019	Awardees from fourth round selected.	Awards from fourth round announced September 25, 2019. Contract negotiations with awardees currently underway.
	2020	Awardees from fourth round contracted.	Contracting is in process.

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 by the end of Q2 2020.
	2019	Awards from solicitation contracted.	Contracting will occur following review of proposals received. This is expected to occur in Q4 2020.
	2020	Competitive solicitation launched.	The solicitation is expected to launch in 2021.
	2020	Awards from solicitation contracted.	Awards will be made after the solicitation has launched and proposals have been received.

Near-Term Milestones for Manufacturing Corps

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Pilot program ends. Metrics reviewed based on pilot program performance and adjustments identified to implement in statewide solicitation.	Pilot program ongoing, target end is Summer 2020. Cohort two was successfully launched Fall 2019.

Near-Term Milestones for Novel Business Models and Offerings

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with first-round Novel Business Models and Offerings (NBMO) awardees.	Seven contracts have been executed; one additional remains in process.
	2018	Contract with second-round NBMO awardees.	Eight contracts are currently in the process of negotiation.
	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.
	2020	Re-release solicitation if necessary for the third round.	Reissuance of the solicitation is still expected in 2020.
	2020	Contract with third-round NBMO awardees.	Contracting will commence after the solicitation is released.
	2020	Perform program assessment to determine continuation.	Program assessment has begun and is expected to be completed in Q1 2020.
	2020	Contract with fourth-round NBMO awardees, if the program is continued.	Contracting will commence after the solicitation is released.

Near-Term Milestones for NextGen HVAC

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Review portfolio of activities, benefits to date, solicit market input, and reassess technology challenges areas and targets.	Review planned for Q4 2019 as part of Advanced Buildings' strategic program planning activity.
	2019	Contract projects from third technology challenge.	Six projects selected to receive contracts from the third technology challenge. Projects expected to be contracted by Q4 2019.
	2019	Issue fourth technology challenge.	Round 4 of the NextGen HVAC Innovation Challenge was issued on Oct 17, 2019. Concept papers are due December 12, 2019 and invited full proposals due in February 2020.
	2019–2020	Contract projects from fourth technology challenge.	Awards expected to be made in April 2020 and projects contracted by December 31, 2020.

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.	Due to a delay in the launch of the solicitation, this milestone is expected to be achieved by the end of 2019.
	2018	Complete bench-scale prototypes of economically viable technologies that enable smart charging.	Contracts are being negotiated with initial award recipients from PON 3578, round 1. Through Q3 2019, three contracts have been signed.
	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. Through Q3 2019, one contract has been signed.
	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 late 2019.
	2020	Contract with projects awarded in third competitive solicitation for the development and demonstration of EV-enabling technologies.	Contracts will begin after the solicitation has been released and award made.

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. Through Q3 2019, three contracts have been signed.
	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 began receiving applications under the rolling submission round 2 of PON 3914 in March 2019. Awards are expected to begin in Q4 2019, after which NYSERDA will contract with the awardees.
✓	2020	Contract with projects awarded in third competitive solicitation for the development and demonstration of public transportation technologies.	The second solicitation has been converted to a rolling solicitation, which will cover the time when the third solicitation would have been issue and projects have been contracted under this solicitation.
	2020	Issue fourth competitive solicitation for the development and demonstration of public transportation technologies.	Work on this milestone has yet to begin.

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.	<p>PON 4082, Environmental and Fisheries Research for Offshore Wind Energy Development, was released in March 2019. The scoring committee was held in mid-June and projects announced in August 2019.</p> <p>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.</p> <p>A climate solicitation is being developed based on updates to the Research Plan completed in early 2019.</p> <p>An Offshore Wind Fisheries Liaison solicitation was released in August 2019. Five proposals were received and are under review.</p> <p>A mini-bid for a Fishing Technical Working Group (F-TWG) was released in Q3 2019.</p> <p>A mini-bid for Equitable Cooling was released in Q3 2019.</p> <p>A solicitation regarding environmental research related to PV site design, information gaps, and mitigation opportunities is being developed during Q4 2019.</p>
	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.	<p>Awards resulting from PON 4082 are anticipated to be contracted in Q4 2019.</p> <p>Contracting for a project resulting from the CCSU mini-bid is complete. The study is expected to be finalized in Q4 2019.</p> <p>Contracting for the climate resilience mini-bid has been completed and the projects is underway.</p> <p>Contracting for the Offshore Wind Fisheries Liaison is anticipated in Q4 2019.</p> <p>Contracting for a project resulting from a mini-bid on equitable cooling is expected to be complete during Q4 2019.</p>

Near-Term Milestones for Energy-Related Environmental Research continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2020	Solicitations issued for research projects consistent with the Research Plan.	Solicitations are expected to be released in Q1 2020.
	2020	Projects contracted from solicitations.	Awards resulting from a climate solicitation are anticipated during Q1 2020.
	2020	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 and briefings.

Near-Term Milestones for Energy Storage Technology and Product Development

Complete ✓	Time Frame	Milestone	Explanation of Progress
	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. Stakeholder meetings have continued with next solicitation planned for late 2019 or early 2020.

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 Department of Energy.	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 the Department of Energy. Investor outreach strategy is in review.
	2019	Contract projects selected through initial solicitations.	Contracting is in process for eight selected projects.
	2019	Update research and development priorities.	Research and development priorities update scheduled for Q4 2019.
	2019	Revise competitive solicitations to align with updated research and development priorities.	Solicitation to be revised with input from Consortium Research and Development Committee by Q2 2020.
	2020	Contract projects selected through solicitations.	Projects to be contracted as awarded in 2020.

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 The sector distribution shown in the Energy Efficiency graphic has been refined since last quarter. Specifically, multi-sector initiatives are now included in each sector they serve rather than in only one primary sector.
- 6 Beginning with Q4 2016, NYSERDA updated emission factors for natural gas, #2 oil, #6 oil, kerosene, propane, wood, and steam to be consistent with emission factors used in the updated NYS Greenhouse Gas Inventory (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).
- 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 As of Q3 2019, NYSERDA's method for reporting Clean Energy Communities program benefits in connection with RGGI funds changed to more accurately reflect community locations (CEF, non-CEF) as well as the proportion of funds now being committed by CEF vs. RGGI.
- 10 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 \$102.2million or 50% of the total approved budget to date, would be included with total NYSERDA commitments.
- 11 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.
- 12 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development Initiative Research and Spending table, an additional \$74,649,184 or 45% of the total approved budget to date, would be included with total NYSERDA commitments.
- 13 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 14 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.
- 15 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 \$27,558,999 or 45% of the total approved budget to date, would be included with total NYSERDA commitments.

- 16 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 17 Leveraged funds from the National Offshore Wind Consortium initiative are inclusive of contributions from the Department of Energy.
- 18 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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