

Clean Energy Fund Quarterly Performance Report through December 31, 2019

Final Report | March 2020

NYSERDA's Promise to New Yorkers:

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

Mission Statement:

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

Vision Statement:

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

Clean Energy Fund Quarterly Performance Report through December 31, 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 December 31, 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 December 31, 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 and climate 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:

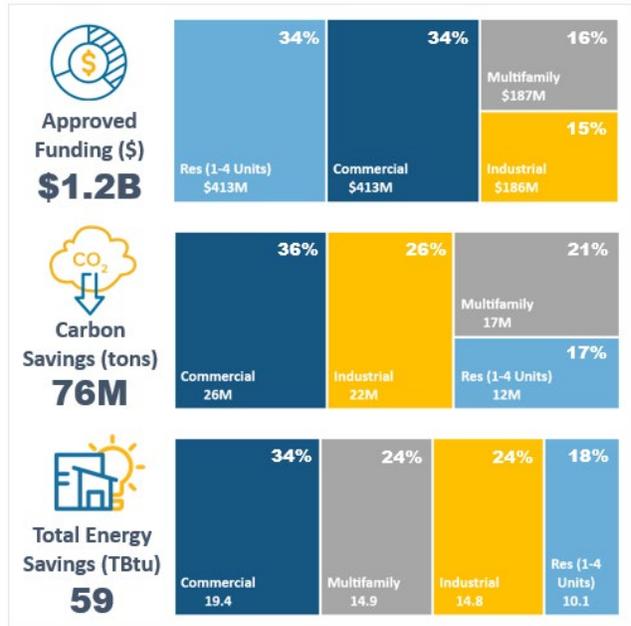
- Six thousand megawatts (MW) of solar by 2025
- Seventy percent renewable electricity by 2030
- Nine thousand MW of offshore wind by 2035
- Carbon-free electricity by 2040

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 British thermal units (MMBtu) in non-electric fuel savings. NYSERDA’s approved investment plans as of December 31, 2019 comprise more than \$1.2 billion of investment in energy efficiency across the commercial, residential, multifamily, and industrial sectors. These approved investments in energy efficiency are expected to drive nearly 76 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 Dec. 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 December 31, 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 December 31, 2019 (millions).⁵

CEF Expected Investment and Benefits vs 10-Year Minimum Goals (as of December 31, 2019)
Market Development - Innovation & Research - NY Sun - NY Green Bank

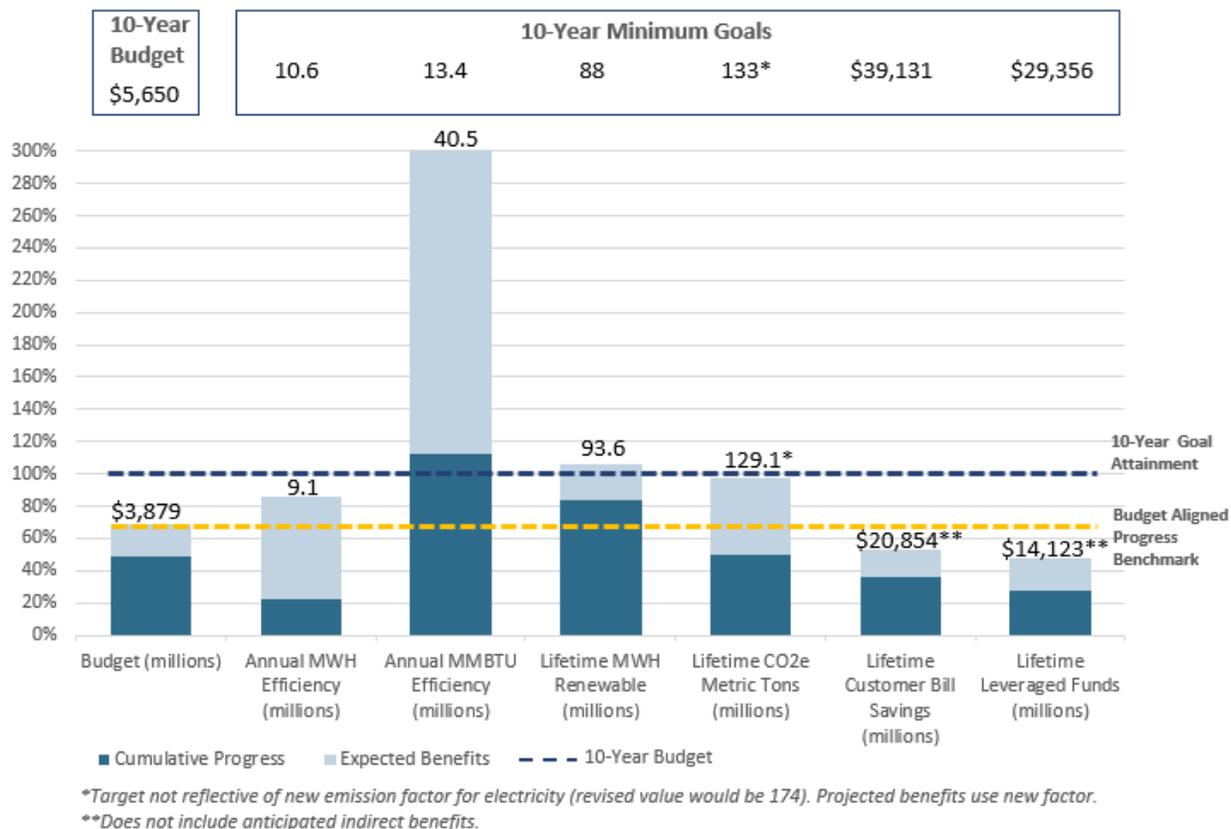


Figure 1 illustrates that deployment of funds is well-aligned with energy and carbon KPI progress at this time. Here, the value Cumulative Progress (committed budgets and benefits) is combined with the value Expected Benefits (approved but not yet committed budgets and benefits) to demonstrate total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

Progress remains on track with the energy efficiency MWh and MMBtu targeted goals, with MMBtu expected benefits already significantly greater than the minimum projected benefits. Carbon dioxide equivalent (CO₂e) emission reduction progress is on track to meet the overall goal for the CEF.⁶

While performance appears low at this time for metrics relating to the customer (participant) bill savings⁷ 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

Following the 2016 release of the CEF Order, NYSERDA introduced 41 new model market transformation initiatives alongside 14 resource acquisition transition initiatives—a purposeful portfolio mix intended to introduce a greater proportion of market-enabling activities without disrupting existing market momentum accustomed to more traditional NYSERDA and utility approaches. Through December 2019, a total of 67 MD and I&R initiatives have been developed by NYSERDA and filed with the Public Service Commission, of which 65 initiatives were considered active, engaging the marketplace during this period. 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. As of January 1, 2020, each of the original resources acquisition transition initiatives are no longer considered active in the marketplace.

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

For new initiatives in the Market Development portfolio, forecasting market uptake and return on investment can be challenging, so NYSERDA is continually gathering and assessing data on progress and reviewing forecasts for accuracy. In that spirit and aligned with the preparation of the annual Investment Plan Performance Report (IPPR), NYSERDA 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.

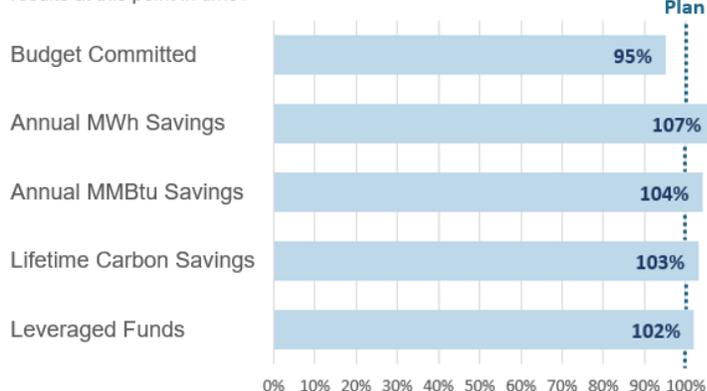
Performance to Plan

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 Q4 2019 are defined as 100% of the 2016, 2017, 2018, and 2019 annual planned benefits.

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 2019 against the plan for the year. Specifically, the vast majority of initiatives are in the market and considered performers. Of those in the monitoring status, four will no longer be active in the market as of Q1 2020 and several others will be receiving directional updates in 2020 based on learning from challenges identified this year.

MD and I&R Portfolio Performance-To-Plan

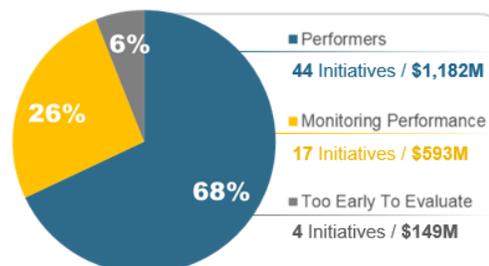
How does performance to date compare with the projected/forecasted results at this point in time?



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

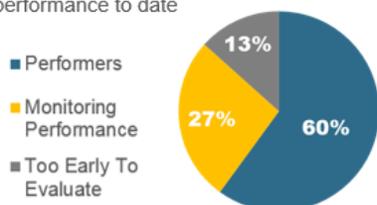
Achieving greater impact per ratepayer dollar involves experimentation with intervention approaches with tolerance for failure, provided it is addressed swiftly and the portfolio is on track to meet long-term outcomes. Accordingly, NYSERDA is using a test-measure-adjust approach to be as responsive to market conditions in real time as possible and redeploy resources from underperforming efforts when appropriate. Overall, the composition of the portfolio in terms of the status categories 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 37% 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 revised 2019 plans.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Industrial Transition	12%	106%	114%	This initiative concluded its effort to provide a glide path for the marketplace to obtain carbon savings in a cost-effective manner in Q4 2019 with consistently strong performance. Several utilities are now planning to offer a similar program.
Clean Energy Communities ⁸	10%	98%	112%	This initiative continues its track record of strong performance. In total for CEF participants, 510 communities completed 1,316 High-Impact Actions. The Communities Chapter Investment Plan was approved on December 11, 2019. NYSERDA is in the process of developing the Clean Energy Communities Leadership Round which will build on the program's success to date and better serve communities interested in taking advanced action beyond the original program design.
Energy Management Technology	7%	95%	227%	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 2019 goals (energy, carbon, leveraged funds). The team intends to expand the reach of this program in 2020 and will incorporate the Industrial RTEM program within this initiative.
Energy Management Practices (previously Continuous Energy Improvement)	6%	95%	109%	NYSERDA continues industrial stakeholder engagement to build pipeline participation. Benefits remain strong and in alignment with the 2019 plan totals, with case studies under development to illustrate successful energy initiatives for dissemination to the marketplace. NYSERDA is actively recruiting vendors that have a strong pipeline of industrial customers in NYS to join the RTEM industrial program (EMIS).
Technical Services	3%	161%	204%	This multisector initiative, a combination of commercial, industrial and agriculture efforts, will expand reach into multifamily projects in 2020. The program exceeded expectations for commitments in 2019 primarily due to aggressive outreach in Westchester County.
Electric Vehicles - Rebate	3%	84%	86%	Although uptake of rebates was 9% higher in 2019 compared to 2018, we did not hit our goal. EV sales were down in 2019 compared to 2018 (both in NY and nationwide). In 2020, we will be launching several community-based marketing strategies to drive demand.
REV Campus Challenge	2%	142%	115%	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.
Code to Zero	2%	147%	n/a	The program finalized the stretch code in Q2 2019 but is not expected to begin tracking energy benefits until 2020. New York City is the first municipality to adopt the stretch code. Training participant progress is higher than expected as the training schedule has been adjusted to be responsive to changes in the State's energy code adoption schedule.
P-12 Schools	2%	115%	130%	P-12 Schools launched a Benchmarking Program in April 2019 and is developing the first Gap Assistance Program which launched Q4 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 CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Workforce Development Industry Partnerships	7%	80%	71%	The program fell short of forecasted participation levels and benefits, largely due to the inclusion of the offer in the NYS Consolidated Funding Application process which market participants found to be cumbersome. In Q1 2020 the solicitation will once again be available on NYSEERDA's website, streamlining the application process. The program offering will also be expanded to include strategies for building electrification solutions.
Commercial and Industrial Carbon Challenge	5%	71%	69%	The Commercial and Industrial Carbon Challenge issued one round of solicitations in 2019 with awards made in Q4 2019. Attrition of one large project has impacted the progress against plans. The program is being revised for 2020 aimed at beneficial electrification and carbon neutral energy projects.
New Construction - Market Rate	5%	3%	31%	The New Construction Market Rate program fell behind its 2019 operating plan. New construction funding from early-CEF programs that were expected to be fully utilized were actually carried over into 2019, delaying the need to use funds approved in this program. Second, while the first round of Buildings of Excellence projects exceeded goals, a much higher proportion of funding was committed to LMI projects than planned, resulting in lower Market Rate commitments for the year. NYSEERDA has gathered feedback from stakeholders throughout the year and will incorporate that learning with program refinements in 2020.
LMI Multifamily	2%	75%	74%	Participation has been relatively stagnant since May 2019. To increase project intake, program updates are being developed for 2020 based on feedback from stakeholders. Marketing tactics are also being revised to provide more customized, targeted outreach to building owners and to utilize a more holistic message of NYSEERDA's multifamily offerings. The Flexible Technical Assistance and On-Site Energy Manager programs are now open to the multifamily sector and are expected to feed the project pipeline.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO2e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO2e Savings	
Underutilized Product Support	12%	128%	111%	<p>This program currently includes two distinct elements: product and appliance standards, and air source heat pumps: Product and appliance standards represent the majority of planned carbon impact and research in this area continues, although actual progress is dependent upon promulgation of standards.</p> <p>The Air Source Heat Pump component of the program is performing as expected. NYSERDA will be transitioning operation of both heat pump incentive programs to the Utilities in 2020.</p>
RetrofitNY - LMI	7%	n/a	n/a	<p>Six design/construction teams completed the design of high-performance retrofit solutions on six affordable housing buildings in 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 in 2020. In 2019, NYSERDA adjusted its strategy to focus more on developing packaged solutions.</p>

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 December 31, 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.⁹

Initiative	Total Budget ^a	Budget Approved as of Dec. 31, 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	\$1,624,214,511	68%	\$376,362,613	\$441,969,533	\$818,328,147	50%	\$805,886,365
Innovation & Research								
Program Funds								
NYS Cost Recovery Fee	\$631,672,000	\$364,905,510	58%	\$52,923,204	\$102,938,742	\$155,861,946	43%	\$209,043,564
Administration	\$274,400,000	\$178,131,679	65%	\$90,923,308	\$131,296	\$91,054,604	51%	\$87,077,075
Evaluation	\$130,200,000	\$59,393,825	46%	\$4,264,392	\$6,197,521	\$10,461,913	18%	\$48,931,912
Total	\$3,430,000,000	\$2,226,645,525	65%	\$524,473,517	\$551,237,092	\$1,075,710,609	48%	\$1,150,934,916

^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 December 31, 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.¹⁰

Initiative	Budget Approved as of Dec 31, 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	\$6,449,414	\$5,860,574	\$12,309,989	97%	\$341,477
Industrial Transition	\$68,908,453	\$24,775,839	\$40,470,504	\$65,246,343	95%	\$3,662,110
Agriculture Transition	\$3,600,000	\$3,582,831	\$5,000	\$3,587,831	100%	\$12,169
Multifamily Market Rate Transition	\$156,573	\$156,214	-	\$156,214	100%	\$359
Single Family Market Rate Transition	\$24,335,189	\$21,770,003	\$1,068,585	\$22,838,587	94%	\$1,496,602
Commercial New Construction Transition	\$30,683,999	\$4,113,610	\$20,324,449	\$24,438,059	80%	\$6,245,940
Low Rise New Construction Transition - Market Rate	\$4,837,000	\$2,911,882	\$1,532,806	\$4,444,688	92%	\$392,312
Multifamily New Construction Transition - Market Rate	\$2,734,000	\$763,005	\$1,550,983	\$2,313,988	85%	\$420,012
Anaerobic Digesters Transition	\$20,150,000	\$1,137,962	\$12,778,296	\$13,916,258	69%	\$6,233,742
Small Wind Transition	\$6,090,000	\$2,689,842	\$897,247	\$3,587,089	59%	\$2,502,911
Solar Thermal Transition	\$298,805	\$287,513	\$6,257	\$293,770	98%	\$5,035
Combined Heat & Power Transition	\$71,550,000	\$16,866,641	\$42,619,876	\$59,486,517	83%	\$12,063,483
TOTAL	\$245,995,485	\$85,504,755	\$127,114,577	\$212,619,333	86%	\$33,376,152

^a Funds approved by DPS as of December 31, 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.^{11,12,13}

Initiative	Budget Approved as of Dec 31, 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	\$7,308,465	\$2,752,059	\$10,060,525	49%	\$10,589,475
Commercial Chapter						
Energy Management Technology	\$66,605,000	\$10,447,589	\$34,465,055	\$44,912,644	67%	\$21,692,356
Real Estate Tenant	\$25,499,999	\$5,063,038	\$3,920,383	\$8,983,421	35%	\$16,516,578
REV Campus Challenge	\$21,650,002	\$2,474,302	\$6,882,655	\$9,356,957	43%	\$12,293,045
P-12 Schools	\$21,600,000	\$898,109	\$3,906,537	\$4,804,645	22%	\$16,795,355
Commercial Chapter Total	\$135,355,001	\$18,883,038	\$49,174,630	\$68,057,668	50%	\$67,297,333
Industrial Chapter						
Energy Management Practices	\$35,439,778	\$5,277,192	\$5,351,822	\$10,629,014	30%	\$24,810,763
Industrial Chapter Total	\$35,439,778	\$5,277,192	\$5,351,822	\$10,629,014	30%	\$24,810,763
Communities Chapter						
Clean Energy Communities	\$81,271,963	\$5,947,856	\$9,424,936	\$15,372,792	19%	\$65,899,171
Community Energy Engagement	\$4,407,818	\$2,284,007	\$2,106,872	\$4,390,879	100%	\$16,939
Communities Chapter Total	\$85,679,781	\$8,231,863	\$11,531,808	\$19,763,671	23%	\$65,916,110
Large-Scale Renewables Chapter						
Offshore Wind Master Plan	\$5,000,000	\$4,918,415	\$71,615	\$4,990,030	100%	\$9,970
Offshore Wind Pre-Development Activities	\$10,000,000	\$6,563,251	\$3,394,752	\$9,958,003	100%	\$41,997
Large-Scale Renewables Chapter Total	\$15,000,000	\$11,481,666	\$3,466,367	\$14,948,033	100%	\$51,967
REV Technical Assistance Chapter						
REV Connect	\$3,000,000	\$2,835,345	\$4,103,113	\$6,938,458	231%	(\$3,938,458)
REV Technical Assistance Chapter Total	\$3,000,000	\$2,835,345	\$4,103,113	\$6,938,458	231%	(\$3,938,458)
Energy Storage Chapter						
Reducing Barriers to Distributed Deployment	\$24,450,000	\$5,816,853	\$6,042,122	\$11,858,975	49%	\$12,591,025
Solar Plus Energy Storage	\$40,000,000	-	\$36,484,299	\$36,484,299	91%	\$3,515,701
Energy Storage Chapter Total	\$64,450,000	\$5,816,853	\$42,526,421	\$48,343,274	75%	\$16,106,726
Clean Transportation Chapter						
Electric Vehicles - Rebate	\$39,500,000	\$21,563,161	\$1,119,820	\$22,682,980	57%	\$16,817,020
Clean Transportation Chapter Total	\$39,500,000	\$21,563,161	\$1,119,820	\$22,682,980	57%	\$16,817,020

Table 6 continued

Initiative	Budget Approved as of Dec 31, 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	\$987,142	\$4,012,858	\$5,000,000	100%	-
Advancing Agricultural Energy Technologies	\$3,760,000	\$16,437	\$2,547,303	\$2,563,740	68%	\$1,196,260
Agriculture Chapter Total	\$8,760,000	\$1,003,579	\$6,560,161	\$7,563,740	86%	\$1,196,260
Low- to Moderate-Income Chapter						
Healthy Homes Feasibility Study	\$212,147	\$177,126	\$35,021	\$212,147	100%	-
LMI Multifamily	\$53,834,420	\$4,695,404	\$12,266,613	\$16,962,017	32%	\$36,872,403
Single Family - Low Income	\$169,760,983	\$97,849,548	\$3,967,664	\$101,817,211	60%	\$67,943,772
Single Family - Moderate Income	\$59,500,878	\$36,967,215	\$1,496,338	\$38,463,553	65%	\$21,037,325
Low-Income Forum on Energy	\$1,300,000	\$269,018	\$135,741	\$404,758	31%	\$895,242
RetrofitNY - LMI	\$30,503,500	\$1,607,841	\$2,619,088	\$4,226,929	14%	\$26,276,571
REVitalize	\$725,000	\$232,896	\$78,028	\$310,924	43%	\$414,076
New Construction - LMI	\$24,784,800	\$702,728	\$23,701,835	\$24,404,563	98%	\$380,237
Solar For All	\$21,245,000	\$1,298,427	\$11,196,755	\$12,495,181	59%	\$8,749,819
Low Rise New Construction Transition - LMI	\$8,487,000	\$3,191,494	\$5,056,395	\$8,247,889	97%	\$239,111
Multifamily New Construction Transition - LMI	\$10,879,000	\$1,809,519	\$9,120,486	\$10,930,005	100%	(\$51,005)
NYS Healthy Homes Value Based Payment Pilot	\$9,813,654	\$1,628	\$3,003,654	\$3,005,282	31%	\$6,808,372
Low- to Moderate-Income Chapter Total	\$391,046,382	\$148,802,841	\$72,677,618	\$221,480,459	57%	\$169,565,923
Workforce Development and Training Chapter						
Workforce Development Industry Partnerships	\$21,345,000	\$3,515,020	\$6,828,913	\$10,343,933	48%	\$11,001,067
Clean Technology and Energy Efficiency Talent Pipeline	\$47,000,000	\$1,416,760	\$5,178,034	\$6,594,793	14%	\$40,405,207
Workforce Development and Training Chapter Total	\$68,345,000	\$4,931,779	\$12,006,947	\$16,938,726	25%	\$51,406,274
Renewable Heating and Cooling						
Heat Pumps and Solar Thermal	\$47,211,685	\$16,865,946	\$14,443,789	\$31,309,735	66%	\$15,901,950
Renewable Heat NY	\$13,487,000	\$6,635,274	\$1,435,858	\$8,071,132	60%	\$5,415,868
Renewable Heating and Cooling Total	\$60,698,685	\$23,501,220	\$15,879,647	\$39,380,867	65%	\$21,317,818
Clean Energy Products Chapter						
Underutilized Product Support	\$46,465,000	\$15,117,442	\$1,236,373	\$16,353,815	35%	\$30,111,185
Clean Energy Products Chapter Total	\$46,465,000	\$15,117,442	\$1,236,373	\$16,353,815	35%	\$30,111,185
Multi-Sector Solutions Chapter						
Soft Cost Challenge	\$10,000,000	\$120,784	-	\$120,784	1%	\$9,879,216
Technical Services	\$36,293,312	\$2,110,180	\$11,726,063	\$13,836,243	38%	\$22,457,069
Commercial and Industrial Carbon Challenge	\$75,222,650	\$2,161,230	\$16,582,601	\$18,743,831	25%	\$56,478,819
Clean Energy Siting and Soft Cost Reduction	\$8,795,000	\$401,477	\$454,145	\$855,622	10%	\$7,939,378
Pay for Performance	\$55,756,709	\$721,235	\$2,536,283	\$3,257,518	6%	\$52,499,191
Information Products and Brokering	\$8,500,000	\$332,912	\$645,879	\$978,792	12%	\$7,521,208
Consumer Awareness	\$5,276,900	\$12,733	\$5,264,168	\$5,276,900	100%	-
Multi-Sector Solutions Chapter Total	\$199,844,571	\$5,860,552	\$37,209,139	\$43,069,691	22%	\$156,774,880

Table 6 continued

Initiative	Budget Approved as of Dec 31, 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	\$1,125,614	\$5,007,297	\$6,132,912	29%	\$14,867,088
Codes Chapter Total	\$21,000,000	\$1,125,614	\$5,007,297	\$6,132,912	29%	\$14,867,088
On-Site Power Chapter						
Fuel Cells	\$15,000,000	\$85,030	\$10,675,000	\$10,760,030	72%	\$4,239,970
On-Site Power Chapter Total	\$15,000,000	\$85,030	\$10,675,000	\$10,760,030	72%	\$4,239,970
New Construction Chapter						
New Construction - Market Rate	\$124,264,632	\$1,392,406	\$30,801,744	\$32,194,150	26%	\$92,070,482
New Construction Chapter Total	\$124,264,632	\$1,392,406	\$30,801,744	\$32,194,150	26%	\$92,070,482
Residential Chapter						
Engaging New Markets	\$15,988,015	\$2,211,099	\$2,774,990	\$4,986,090	31%	\$11,001,925
Residential Chapter Total	\$15,988,015	\$2,211,099	\$2,774,990	\$4,986,090	31%	\$11,001,925
NYS Cost Recovery Fee Market Development	\$27,732,181	\$5,428,711	-	\$5,428,711	20%	\$22,303,470
Total Market Development	\$1,378,219,026	\$290,857,858	\$314,854,956	\$605,712,814	44%	\$772,506,212

* Totals may not sum exactly due to rounding

^a Funds approved by DPS as of December 31, 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.^{14,15}

Initiative	Budget Approved as of Dec 31, 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	\$2,340,821	\$605,554	\$2,946,375	47%	\$3,353,625
High Performing Electric Grid	\$110,500,000	\$8,085,277	\$25,420,562	\$33,505,840	30%	\$76,994,160
Power Electronics Manufacturing Consortium	\$16,700,000	\$16,700,000	-	\$16,700,000	100%	-
Grid Modernization Chapter Total	\$133,500,000	\$27,126,098	\$26,026,116	\$53,152,215	40%	\$80,347,785
Innovation Capacity and Business Development Chapter Total						
CleanTech Startup Growth	\$58,200,000	\$9,652,661	\$27,508,082	\$37,160,743	64%	\$21,039,257
Manufacturing Corps	\$12,000,000	\$2,699,102	\$1,562,000	\$4,261,102	36%	\$7,738,898
Novel Business Models and Offerings	\$16,100,000	\$809,422	\$5,434,918	\$6,244,340	39%	\$9,855,660
Innovation Capacity and Business Development Chapter Total	\$86,300,000	\$13,161,185	\$34,505,000	\$47,666,185	55%	\$38,633,815
Building Innovation Chapter						
NextGen HVAC	\$15,000,000	\$2,103,877	\$6,780,664	\$8,884,541	59%	\$6,115,459
Building Innovation Chapter Total	\$15,000,000	\$2,103,877	\$6,780,664	\$8,884,541	59%	\$6,115,459
Clean Transportation Chapter						
Electric Vehicles - Innovation	\$11,850,000	\$2,179,763	\$5,838,233	\$8,017,996	68%	\$3,832,004
Public Transportation and Electrified Rail	\$18,500,000	\$786,564	\$5,334,461	\$6,121,025	33%	\$12,378,975
Clean Transportation Chapter Total	\$30,350,000	\$2,966,327	\$11,172,694	\$14,139,021	47%	\$16,210,979
Energy-Related Environmental Research Chapter						
Energy-Related Environmental Research	\$37,800,000	\$3,186,004	\$10,628,395	\$13,814,399	37%	\$23,985,601
Energy-Related Environmental Research Chapter Total	\$37,800,000	\$3,186,004	\$10,628,395	\$13,814,399	37%	\$23,985,601
Renewables Optimization Chapter						
Energy Storage Technology and Product Development	\$33,000,000	\$1,946,750	\$8,052,751	\$9,999,500	30%	\$23,000,500
National Offshore Wind Research & Development Consortium	\$22,500,000	\$1,743,540	\$5,773,121	\$7,516,661	33%	\$14,983,339
Renewables Optimization Chapter Total	\$55,500,000	\$3,690,289	\$13,825,872	\$17,516,162	32%	\$37,983,839
NYS Cost Recovery Fee Innovation & Research	\$6,205,510	\$688,770	-	\$688,770	11%	\$5,516,740
Innovation Capacity and Bus. Dev. Chapter Total	\$364,905,510	\$52,923,204	\$102,938,742	\$155,861,946	43%	\$209,043,564

Table notes are on the next page

- * Totals may not sum exactly due to rounding
- a Funds approved by DPS as of December 31, 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.¹⁶

Initiative	Completed Projects through Sept 30, 2019 with Adjustments	Completed Projects through 10/1/19-12/31/19	Total Completed Projects through Dec 31, 2019	Current Pipeline Through Dec 31, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Direct Planned Benefits Through Q4 2019	% of Cumulative Annual Direct Planned Benefits Through Q4 2019	Total Cumulative Annual Direct Planned Benefits through 2025	% of Total Cumulative Annual Direct Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	465,912	33,252	499,164	1,815,916	2,315,079	2,158,535	107%	12,862,521	18%
Energy Efficiency (MMBtu)	6,872,380	496,401	7,368,781	7,625,428	14,994,210	14,382,109	104%	59,189,063	25%
Energy Efficiency (MW)	5	1	6	94	100	*	-	*	-
Renewable Energy (MWh)	202,054	23,002	225,056	75,551	300,607	*	-	*	-
Renewable Energy (MW)	233	19	252	4	255	*	-	*	-
CO2e Reductions (metric tons)	1,026,005	50,658	1,076,663	1,192,288	2,268,951	*	-	*	-
Customer Bill Savings (\$ million)	\$145.71	\$13.17	\$158.87	\$302.62	\$461.49	*	-	*	-
Leveraged Funds (\$ million)	\$1,061.82	\$113.88	\$1,175.70	\$1,824.70	\$3,000.40	*	-	*	-
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)	\$338.37	\$10.38	\$348.75	\$502.23	\$850.99	*	-	*	-
Total Energy Efficiency (MWh)	465,912	33,252	499,164	1,815,916	2,315,079				
Total Energy Efficiency (MMBtu)	6,872,380	496,401	7,368,781	7,625,428	14,994,210				
Total Energy Efficiency (MW)	5	1	6	94	100				
Total Renewable Energy (MWh)	202,054	23,002	225,056	75,551	300,607				
Total Renewable Energy (MW)	233	19	252	4	255				
Total CO2e Reductions (metric tons)	1,026,005	50,658	1,076,663	1,192,288	2,268,951				
Total Customer Bill Savings (\$ million)	\$145.71	\$13.17	\$158.87	\$302.62	\$461.49				
Total Leveraged Funds (\$ million)	\$1,400.18	\$124.27	\$1,524.45	\$2,326.93	\$3,851.38				

* 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 Sept 30, 2019 with Adjustments	Completed Projects through 10/1/19-12/31/19	Total Completed Projects through Dec 31, 2019	Current Pipeline Through Dec 31, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Direct Planned Benefits Through Q4 2019	% of Cumulative Annual Direct Planned Benefits Through Q4 2019	Total Cumulative Annual Direct Planned Benefits through 2025	% of Total Cumulative Annual Direct Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	6,960,655	542,239	7,502,894	24,826,885	32,329,779	*	-	*	-
Energy Efficiency (MMBtu)	104,903,478	8,193,783	113,097,261	106,443,860	219,541,121	*	-	*	-
Renewable Energy (MWh)	1,416,148	122,391	1,538,539	913,742	2,452,281	2,722,463	90%	15,915,602	15%
CO2e Reductions (metric tons)	14,662,157	707,606	15,369,763	15,302,362	30,672,125	29,794,408	103%	121,595,559	25%
Customer Bill Savings (\$ million)	\$1,952.50	\$177.91	\$2,130.41	\$4,042.91	\$6,173.32	\$5,573.75	111%	\$12,034.33	51%
Leveraged Funds (\$ million)	\$1,061.82	\$113.88	\$1,175.70	\$1,824.70	\$3,000.40	\$2,930.10	102%	\$6,729.72	45%
Innovation and Research									
Energy Efficiency (MWh)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MMBtu)	-	-	-	-	-	*	-	*	-
Renewable Energy (MWh)	-	-	-	-	-	*	-	*	-
CO2e Reductions (metric tons)	-	-	-	-	-	*	-	*	-
Customer Bill Savings (\$ million)	-	-	-	-	-	*	-	*	-
Leveraged Funds (\$ million)	\$338.37	\$10.38	\$348.75	\$502.23	\$850.99	\$851.27	100%	\$1,615.21	53%
Total Energy Efficiency (MWh)	6,960,655	542,239	7,502,894	24,826,885	32,329,779	-	-	-	-
Total Energy Efficiency (MMBtu)	104,903,478	8,193,783	113,097,261	106,443,860	219,541,121	-	-	-	-
Total Renewable Energy (MWh)	1,416,148	122,391	1,538,539	913,742	2,452,281	-	-	-	-
Total CO2e Reductions (metric tons)	14,662,157	707,606	15,369,763	15,302,362	30,672,125	-	-	-	-
Total Customer Bill Savings (\$ million)	\$1,952.50	\$177.91	\$2,130.41	\$4,042.91	\$6,173.32	-	-	-	-
Total Leveraged Funds (\$ million)	\$1,400.18	\$124.27	\$1,524.45	\$2,326.93	\$3,851.38	-	-	-	-

* 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).	With the addition of 138 sites in Q4 2019, there are a total of 728 tenant sites enrolled in the program. Projects resulted in increased energy efficiency in tenant spaces and have "primed" the sector for more energy efficiency projects. There are more than 20 portfolios and multi-site projects currently in the program and it is anticipated that more participation from portfolios will be driven by the recently passed local laws in NYC.
	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 to 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. NYSERDA continues to reach out to the architecture and design community, who are key influencers in this process as well.

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. We are seeing more leasing departments becoming interested in the topic and looking to better understand it. We will also be gathering feedback from the broker community with our new Broker Referral PON, which will be useful to shed light on the dynamics involved in this decision-making process.
	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 infancy as the program gathers momentum in the marketplace and building owners explore different ways to leverage the program to get tenants to implement energy efficiency. NYSERDA is beginning to see different use cases of building owners who are 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.	Impact evaluation of completed projects began 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.	RTEM data store for warehousing and analysis of RTEM project data is operational.
✓	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. This has been demonstrated through hundreds of RTEM Basic (HVAC only) projects and a number of RTEM Premium (beyond HVAC) projects.
	2020	Industry adopts standardized methodologies for calculating, analyzing, and reporting costs and savings data.	Integrating data standardization via Project Haystack into Program language. 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 data sets and is on track to achieve this milestone.
	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 127 institutions signed up as of the end of Q4 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 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. Six member spotlights are finalized and posted to the REV Campus Challenge website and several more are in development.
	2020-2022	140 out of 250 institutions sign up to be REV Campus Challenge Members.	The REV Campus Challenge has 127 institutions signed up as of the end of Q4 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.	REV Campus Challenge annual workshops were held in June 2019; four members hosted, providing them opportunity to discuss on-campus projects with students. NYSERDA officially launched the “meet the members” portion of the REVCC website, with the objective of highlighting member activities. REVCC will continue to track member planning and commitments through its annual member survey.
	2020-2022	Fifteen percent more NYS institutions participate in clean energy commitment opportunities, conferences/events, peer groups, etc., building a strong support network.	A number of outputs indicate milestone achievement and will be monitored closely: <ul style="list-style-type: none"> • Increase in institution attendance at the State of NY Sustainability Conference = 109% (2015 baseline, 2018 conference data) • REVCC members reporting new/updated climate action plans or similar = 43% (2015 baseline, 2019 survey data) • - Consistent attendance at REVCC workshops year to year.
	2020-2022	Annual/Semi-annual survey of member institutions provides feedback on clean energy progress and changes in overall campus, student, and community mindset.	Annual surveys developed have been distributed to members for three years (2017-2019). Response rates are high (80%+).

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. This effort will be ongoing.
✓	2019	Launch a competitive solicitation to provide gap assistance.	The Green & Clean Energy Solutions program was launched on November 18, 2019.
	2020	Assess participation and seek feedback on gap assistance funding program; identify any needed changes.	Planned effort throughout 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.	Planned effort throughout 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 have been developed for each completed project. Final versions (seven in total) have been developed and are currently being shared with the marketplace via our 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.	Three case studies have been finalized, a SEM How-To Guide developed, and a SEM 101 webinar created and delivered.
✓	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 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 Wastewater Cohort, total identified savings consists of 13,090 MWh and 1,158 MMBtu.
	2019-2021	Develop and release RFP for commercial SEM Energy Coach.	RFP will be released Q1 2020.
	2019-2021	Develop and release PON for commercial SEM cohorts.	The release of the PON will occur after the selection of the commercial Energy Coach. This is planned for Q4 2020–Q1 2021.
	2019-2021	Development and dissemination of SEM collateral including case studies, webinars, and tools for SEM adoption.	The development of these materials will begin Q3 2020.
	2019-2021	Development of a market dissemination plan inclusive of stakeholders, vendors, and end-use customers to increase the awareness and adoption of SEM.	In development as of Q4 2019.
	2019-2023	Release PON for industrial SEM cohorts.	RFP will be released Q1 2020.
	2019-2023	Release RFP for Energy Coach for additional cohorts.	This RFP will be released in Q3 2020.
	2020	Launch self-serve, web-based SEM training as an alternative option to the cohort-based offering.	This will launch Q1 2020.

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.	In the second half of 2019 significant progress was made engaging 29 RTEM Industrial sites.

Near-Term Milestones for Clean Energy Communities

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

Near-Term Milestones Community Energy Engagement

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	NYSERDA initiates award proposals for regional-specific pilot projects.	The mini-bid solicitation was issued in Q2 2019 and NYSERDA will initiate award proposals by end of Q1 2020.
	2018–2020	NYSERDA develops one or more case studies on regional-specific pilot projects and other support provided through the base activities.	Case study development began in Q4 2019. The first case studies will likely be focused on participant successes, while the regional-specific pilot case studies will be produced post-pilot launch, mid- to late 2020.
	2019	Conduct surveys of customers assisted by local-based organizations (LBO) to assess performance.	NYSERDA expects to begin conducting surveys early 2020 after the program has been up and running for over 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.

Near-Term Milestones for REV Connect

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

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

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

Near-Term Milestones for Solar Plus Energy Storage

Complete ✓	Time Frame	Milestone	Explanation of Progress
	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.	NYSERDA participated in IPWG and ITWG meetings throughout 2019.
	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
	2018	Monitor small (6,000 square feet) pilot demonstration of a basic light and shade control system.	Installation of monitoring equipment (Lighting and CO ₂) took place in November 2019, and data collection has been ongoing.
	2018	Publish case study of demonstration.	The case study will be published once the demonstration data has been collected and analyzed, expected in Q1 2020.
	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.	Installation of monitoring equipment (light and CO ₂) will be completed in Q1 2020. 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, expected Q1 2021.
	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.	As of the end of Q4 2019, three of the four projects recommended for funding were contracted. The fourth will be contracted in January 2020. A second round of the PON will be issued in 2020.
	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. 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.
	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 NYS and NYC affordable housing agencies have been engaged and a lenders working group has been launched. NY Green Bank, Community Preservation Corp, and NYC Energy Efficiency Corp have been engaged to look at ways to bring additional private capital to affordable deals. NYSERDA is currently investigating underwriting to savings among other possibilities.

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.	Community planning activities have commenced and is ongoing. The stakeholder community plans have been developed. In addition, NYSERDA will leverage existing toolkits and develop a best practice document.
	2017	Community-scale clean energy project development and implementation started.	Sustainable Binghamton continues to explore development engagement, finance, and ownership options as well as engage the community. WE ACT and PUSH continue to engage community/stakeholders.
✓	2019	NYSERDA receives feedback from community groups and on the toolkit.	NYSERDA has received and is working on processing feedback and input to develop best practices.
	2019	Completion of five community energy projects.	WE ACT, PUSH, and Sustainable Binghamton continue to engage the community/stakeholders and work toward 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 was executed on September 16, 2019.
	2020	Implement a statewide conference in Q2 of 2020.	Conference date is set for May 19–20, 2020 in Albany, NY. 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 Q1 2020.
	2017	Commencement of pilot activities.	Pilot implementation is expected to begin in Q1 2020.
	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.	Project intake has remained low in Q4 2019. NYSERDA has completed a round of stakeholder feedback to identify market barriers to program participation and is in the process of making changes to the program to mitigate those barriers. Additionally, the Multifamily Summit was held in October in Tarrytown and featured record attendance. NYSERDA is adjusting marketing approaches to improve engagement with potential participants. Potential marketing adjustments include more on-site events with building owners and developers as well as presenting a holistic understanding of the multifamily suite of programs (including the Flexible Technical Assistance program, which was recently extended to the multifamily sector and is anticipated to alleviate the hurdle of pre-development project costs).

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Specification list of healthy homes interventions to address asthma and household injury.	Specification list is currently in progress. Measures have been finalized. Documentation for distribution to pilot participating contractors is in progress. Expected Q1 2020.
	2019	Release of an RFQ to identify healthy homes energy/housing service providers.	RFQ is currently being drafted. Anticipated to be released in Q1 2020.
	2019	Onboarding of energy services implementation contractor and health implementation infrastructure.	Discussions about modifications to the energy services contractor's scope of work for implementation are currently underway. A draft map of the health implementation infrastructure has been outlined.
	2019	Commencement of pilot implementation.	Anticipated in Q1 2020.
	2019	Secure all submissions of social determinants of health template for value-based payment (VBP) arrangement integration (rolling).	One social determinant of a health template has been submitted and approved (HealthPlus). Four additional social determinants of health template drafts are moving through the approval process at DOH (one with HealthPlus, two with HealthFirst, and one with Emblem).
	2020	Preliminary review of progress to date, including assessment of measure frequency and cost, barriers, and opportunities to inform remainder of pilot.	Contingent on pilot launch.
	2020	Completion of value-based payment contracting toolkits for MCO/VBP Providers and community-based organizations.	Preliminary discussions about toolkit contents and approach are underway.

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 have been selected; it is anticipated that the contracts for the Buildings of Excellence competition will be completed in Q1 and Q2 2020.
✓	2019	Issue solicitation to launch Simplified Design and Tools: Model Measure Packages activity.	A mini-bid was released January 6, 2020.
	2019	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Contract(s) will follow once awards are made from the mini-bid released January 6, 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 Q1 2020.
	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.	Contracts have been issued to Primary Energy Consultant's (PEC's) to offer first time developers mentoring support.
	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 was released on October 29, 2019 at the time the Round 1 awards were announced. The early release extends the time the solicitation is available to increase opportunities for 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.	Solar for All community solar projects are still in the process of reaching full subscription status. The next solicitation, which will add capacity and utility service territory, is expected to be released in 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. The next solicitation has not been released, because the existing Solar for All community solar projects are still working toward full subscription.
	2020	Finalize post-initiative transition strategy.	While the total number and location of Solar for All projects is still being determined, the post-initiative transition is still in development.

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 are complete.
	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 strategy to share the results of the projects and business case demonstrations. Two business cases are completed and have been added to the Workforce Development website.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2020	Revise and reissue OJT and internship PONS	Both the OJT and Internship PONS were revised and reissued in January 2020.

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.	Design and installation practice checklist has been developed and is posted on the GSHP Rebate Program website. Case studies likely won't be developed until projects that result from the Geothermal Clean Energy Challenge are installed.
	2019	Develop aggregated procurement for colleges and universities and State and local buildings.	One contractor was used to perform screenings. NYPA procured three separate contractors 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. Marketing strategies will be implemented as part of NYSERDA's building electrification market enablement plan, expected to launch Q2 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 Q2 2020. 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. A manuscript is in development.
	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 was released in Q4 2019. Concept papers are under review in Q1 2020. Proposals for the concept papers that are selected will be submitted in Q1 2020. Final selection will occur in Q2 2020.
✓	2019	Reissue workforce development program based on market feedback.	Biomass technologies are eligible under the suite of Clean Energy Workforce Development PONs, which were released in Q4 2019.

Near-Term Milestones Underutilized Product Support

See endnote section for more information.

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.	A total of 50 NYSERDA-funded ASHP demonstration projects have been awarded, with a majority of them currently functioning and monitoring data. Report out on savings has begun to populate factual results for case studies; however, demonstration site installations were slower than expected. As of Q4 2019 all 50 projects were installed and capturing savings. It is expected that greater detailed results will be available to produce case studies in Q2 2020.
✓	2018	Issue competitive solicitation to identify and test alternative business models.	NYSERDA's Novel Business Models and Offerings PON included underutilized products support.
✓	2019	Issue open solicitation to expand alternative business models based on results from competitive solicitation in 2018.	
	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). Vermont Energy Investment Corporation is now building the tool based on input from the collaboration. NYSERDA is in the process of reviewing the initial draft and expects the final web-based tool to be completed and available to the public in Q2 2020.
	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.
n/a	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
n/a	2017	Issue competitive solicitation for first round of the challenge.	This program never launched and as of Q1 2020 has been canceled. It will be removed from reporting next period.

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.	Proposals were received in 2019, and contracting is currently underway.
✓	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.	Dissemination of materials will begin in 2020.
✓	2020	Issue revised open enrollment FlexTech Program.	The revised FlexTech Program launched on November 27, 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
n/a	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 2019 with a total of approximately 50 one-on-one meetings. NYSERDA engaged with host towns for Battery Energy Storage Workshops on the new Battery Energy Storage Guidebook in 2019; this activity will continue into 2020. Thus far, 40 workshops have been conducted 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.	Initial asset data pilot analysis is complete for residential sector; additional refinement of analysis for commercial sector is expected to be complete by the end of Q1 2020.
✓	2019	Roll out heat pump Customer Targeting Tool to 100 contractors outside heat pump program, including residential EE contractors and initial P4P aggregators.	Work to optimize Customer Targeting Tool for residential energy efficiency contractors and P4P aggregators is complete. The Customer Targeting tool is available to participating contractors in these programs.
✓	2019	Issue award for the development of value proposition calculator to support adoption of energy efficiency in the small commercial sector.	Solicitation issued in Q3 2019 through a mini-bid to a pool of qualified contractors but no contracts were awarded due to high proposal costs and limited participation from market actors with expertise in the small to medium business (SMB) sector. NYSERDA is working to issue an RFP by Q3 2020 to encourage lower cost proposals that include partnerships with market actors with expertise in SMB sector.
✓	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, along with the Real Estate Board of New York and many building owners, sponsored the PropTech Challenge, a hackathon during Real Estate Tech week in Q4 2019. Ninety-one submissions were received; winners are currently engaged in opportunities to receive funding for market tests from NYSERDA.
✓	2019	DER Data Platform pilot is operational.	The DER Data Platform is operational.
✓	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 with over 100 registered users statewide. Additional capabilities and applications have been added to provide users with more customer opportunities.
	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.

Near-Term Milestones for Information Products and Brokering (continued)

	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 rollout 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.	RFP for an EE value proposition calculator for small and medium businesses will be released in Q3 2020.
	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.	On track to complete milestone.

Near-Term Milestones for Consumer Awareness

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Develop communication strategy for contractor, manufacturing, and distributor engagement.	Campaign has been aligned to launch with the transition of Heat Pump programs to ConEdison and the launch of Business Energy Pro. As soon as the launch date is final, NYSERDA will communicate with these audiences.
✓	2019	Develop public relations and community integration strategy.	NYSERDA collaborated with ConEdison's community affairs representative, the County Executive office, and Sustainable Westchester to engage local communities. Meetings with Chambers of Commerce, professional organizations, and municipalities will be held the first week in March with the goal to persuade these entities to communicate with their constituents.
	2019	Develop landing environment.	Prototype for Residential and Small Business has been developed and will be shared with ConEdison.
	2019	Develop an inbound communications strategy and architecture including appropriate referral destinations and responses for anticipated areas of interest.	Each potential action has been mapped to identify the appropriate response. This will be finalized when ConEdison has final details on their heat pump programs.
	2019	Develop messaging and creative content.	Video (TV) concepts have been selected and the team is now sourcing locations for shooting.
	2019	Buy and execute media placements.	Campaign timeline has been pushed back to April 2020 to accommodate Business Energy Pro Launch and transition of heat pumps program to ConEdison. Media Plan has been approved.
	2019	Media and landing environment go live in market.	These will go live prior to launch.
	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 Q1 2020 to support statewide rollout.
	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.	The NYStretch Energy Code 2020 was issued with a press release in Q4 2019.
	2018	Issue Pilot #1 solicitation to pilot alternative enforcement structures.	Voice-of-customer (VOC) work is ongoing. NYSERDA will interview principals in large, medium, and small municipalities, attempting to sample from a number of 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).	VOC work is ongoing. NYStretch code, cost effectiveness analyses and toolkit items were released Q4 2019. Solicitation development will commence after VOC. Projected issuance of solicitation in Q2 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.	Development of a Roadmap to Zero Energy Buildings for New Construction started in Q3 2018, including the idea of requiring a zero energy code by 2030. In early 2019, the roadmap transitioned into the Carbon Neutral Buildings Roadmap, with an expanded scope including existing buildings, a shift in goal from zero energy by 2030 to carbon neutral by mid-century, and an extended schedule with the roadmap release targeted for September 2020 to inform the Climate Leadership and Community Protection Act requirements. By late December 2019, the schedule was further adjusted to coordinate with development in parallel of an electrification roadmap. Research is well underway to support roadmap development and several stakeholder sessions have been completed, providing input including policy ideas. A draft of the Carbon Neutral Buildings Roadmap is scheduled to be released mid-year 2020, with final publication targeted for Q1 2021. The strategy to require zero energy new construction by 2032 still is a core element of the roadmap. The change from 2030 to 2032 reflects the timing required for New York State to update its energy and building codes in coordination with the national model codes, which occur on a three-year cycle. In parallel with the Carbon Neutral Building Roadmap, NYSERDA is analyzing statutory and regulatory methods for requiring net zero energy in new construction to align with Climate Leadership and Community Protection Act requirements.
✓	2019	Issue solicitation for audience-specific training content and approaches.	The solicitation was issued in Q4 2019.
	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.	Contracting is in process.
	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.	Thirty-five applications have been received and eighteen 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. Equipment has been delivered to one site.
	2019	Confirm first annual performance of fuel cell operation. This will start in 2019 and continue in 2020 based on timing of applications.	Five 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
	2019	Contract with awardees for Buildings of Excellence Competition.	Two contracts were executed during Q4. Five contracts will be executed in early 2020.
	2019	Contract with awardees for Simplified Design and Tools: Integrated Design Practices Advisor for first-time Developers.	Contracts have been issued to Primary Energy Consultant's (PEC's) to offer first time developers mentoring support
	2019	Contract with awardees for second Net Zero Energy Commercial/Carbon Competition	Awards were announced on December 19, 2019 and execution of Round 2 contracts are expected by Q4 2020.
✓	2019	Issue mini-bid for technical reviewers through existing NYSERDA umbrella contracts to begin performance analysis to assess project performance.	The solicitation was released on January 6, 2020.
	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.	The solicitation was released on January 6, 2020.
	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 was released on October 29, 2019 at the time the Round 1 awards were announced. The early release extends the time the solicitation is available to increase opportunities for outreach.
	2020	Contract with awardees for second round of Buildings of Excellence Competition.	Contracts for the second round of the Buildings of Excellence competition are anticipated to 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.	Contracts awarded and training completed for home inspectors in Q4 2019.
	2020	Implement initial pilot for leveraging relationships that upstream market actors have with contractors.	Planning work has begun and planning activities continue.
n/a	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.	PON 4128 released rounds 1 and 2 in Q3 2019.
✓	2017	Enter into contracts for projects awarded under the targeted competitive solicitation #2.	Contracts were finalized in Q4 2019.
✓	2018	Identify technology gaps necessary to support community grid operation based on completed NY Prize Stage 2 evaluations.	Stage 2 deliverables are complete, and no future solicitations are planned.
	2019	Enter into contracts for projects awarded under the targeted competitive solicitation #4.	Contracting is in process.
	2020	Issue targeted competitive solicitation #6.	PON 4128 Round 3 to be released Feb 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
n/a	2017	Consortium expanded to include at least four partner companies/customers.	Power Electronics Manufacturing Consortium assets and processes have been acquired by CREE Inc. Therefore, the Consortium will no longer operate as a Consortium and no additional partner companies/customers will be added.
✓	2018	ISO-9001 certification complete.	ISO-9001 certification will be complete (testing and qualification is complete) when CREE Inc. Fab is open.
n/a	2018	Consortium expanded to include at least eight partner companies/customers.	Power Electronics Manufacturing Consortium assets and processes have been acquired by CREE Inc. Therefore, the Consortium will no longer operate as a Consortium and no additional partner companies/customers will be added.
n/a	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 2020.
	Starting 2017	Entrepreneur boot camp held.	Entrepreneurial-type boot camps/workshops are held throughout the operation of the incubators. These boot camps have been held as planned throughout 2017, 2018, and 2019. Additional boot camps/workshops are planned through the remainder of 2020.

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.	This rolling solicitation closed on September 30, 2019. Twenty-one awards have been made, and an additional nine Ignition Grant contracts have been approved. The nine awards are expected to be under contract in Q1 2020.

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 in Q1 2020.

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.	Research on customer engagement is contracted and underway. No solicitation has been needed.

Near-Term Milestones for Cleantech Startup Growth 76 West

Complete	Time Frame	Milestone	Explanation of Progress
✓	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.	Five contracts have been executed. Three are under 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 Q1 2020 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. Two contracts are executed, the other four are expected to be contracted by Q2 2020.
✓	2019	Issue fourth technology challenge.	Round 4 of the NextGen HVAC Innovation Challenge was issued on Oct 17, 2019. Forty-seven concept papers were received December 12, 2019. Concept papers are currently under review and full proposals will be due in Q1 2020.
	2019–2020	Contract projects from the fourth technology challenge.	Awards expected to be made in Q2 2020 and projects contracted by Q4 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.	Contracts are being negotiated with initial award recipients from PON 3578, Round 1. Through Q4 2019, four contracts have been signed.
	2018	Complete bench-scale prototypes of economically viable technologies that enable smart charging.	Projects are underway and are expected to be completed in 2020.
	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 and contracts are being negotiated with initial award recipients. Through Q4 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. As of the end of 2019, there are more than 40 locations with DCFCs of 50 kW or greater in NYS, although only some of these are along major interstate corridors.
	2019	Issue third competitive solicitation for the development and demonstration of EV-enabling technologies.	The third solicitation is expected to launch in Q2 2020.
	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 awards 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 Q4 2019, five 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.	NYSERDA is working with transit agencies to evaluate whether this activity is still necessary.
	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. NYSERDA began making awards in Q4 2019 and has begun the contracting process with the initial awardees.
	2020	Issue the fourth competitive solicitation for the development and demonstration of public transportation technologies.	NYSERDA plans to issue a new public transit solicitation in Q2 2020.

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>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>RFP4261, Geophysical and Geotechnical Surveys to Support Offshore Wind, was released in December 2019. Proposals are due in January 2020.</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 were completed in January 2020.</p> <p>Contracting for a project resulting from the CCSU mini-bid is complete. The study is expected to be finalized in Q1 2020.</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 was completed in Q4 2019.</p> <p>Contracting for a project resulting from a mini-bid on equitable cooling was completed 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.	A solicitation regarding environmental research related to PV site design, information gaps, and mitigation opportunities is being developed and will be released in January 2020. A solicitation relating to Renewable Energy Site Development Impacts on the Environment will be released in 2020. A solicitation relating to climate assessment research will be released in 2020. A solicitation relating to remote sensing, urban and micro scale air quality and exposure improvement will be released in 2020.
	2020	Projects contracted from solicitations.	RFP4261, Geophysical and Geotechnical Surveys to Support Offshore Wind, was released in December 2019 and it is anticipated that awards resulting from this solicitation will be contracted in 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 were performed over the course of the year. Stakeholder meetings have continued with next solicitation planned for 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.	Consortium Executive Director joined in September 2019. Consortium communication and outreach strategy is approved and in place.
	2019	U.S. manufacturing and data management plans approved by board of directors and Department of Energy.	Consortium Executive Director joined in September 2019. Draft U.S. Manufacturing and Data Management plans are in review.
	2019	Investor and public sponsor outreach strategies approved by board of directors.	Public sponsor strategy approved by the Board of Directors and DOE. Investor outreach strategy is in review.
	2019	Contract projects selected through initial solicitations.	Contracting is in progress for eight selected projects. Four of the eight are in final stages of NYSERDA and DOE approval. NYSERDA expects all contracts to be executed by end of Q1 2020.
✓	2019	Update research and development priorities.	Version 2 of National Offshore Wind R&D Consortium R&D Roadmap was released in December 2019.
	2019	Revise competitive solicitations to align with updated research and development priorities.	The solicitation was updated with knowledge acquired in July and September 2019. Lessons learned will be applied to second and future solicitations. A second solicitation planned for Q3 2020 will be led by consortium staff.
	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. nyserdera.ny.gov/About/Publications/New-Efficiency.
- 5 Beginning with Q4 2016, NYSERDA updated emission factors for natural gas, #2 oil, #6 oil, kerosene, propane, wood, and steam to be consistent with emission factors used in the updated NYS Greenhouse Gas Inventory (nyserdera.ny.gov/About/Publications/EA-Reports-and-Studies/Energy-Statistics). These factors are derived from EPA's February 2016 State Inventory Tool release (<https://www.epa.gov/statelocalclimate/state-inventory-and-projection-tool>). Steam emission factors have been updated to be consistent with New York City's updated Greenhouse Gas Inventory. (http://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/NYC_GHG_Inventory_2014.pdf).
- 6 Per the Clean Energy Advisory Council (CEAC) Metrics, Tracking and Performance Assessment (MTPA) Working Group, NYSERDA has adopted a marginal electricity grid emission factor of 1,103 pounds 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.
- 7 Customer Bill Savings are calculated as direct energy bill savings realized by customers participating in NYSERDA's programs.
- 8 As of Q4 2019, NYSERDA's method for reporting Clean Energy Communities program benefits in connection with RGGI funds changed to more accurately reflect community locations (CEF, non-CEF) as well as the proportion of funds now being committed by CEF vs. RGGI.
- 9 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development and Innovation and Research Portfolio Level Budgets and Spending table, an additional \$101.8 million or 54% of the total approved budget to date, would be included with total NYSERDA commitments.
- 10 Initiative commitments that are in excess of their total budgets are in anticipation of program attrition. No initiative will have total expenditures in excess of that initiative's total budget at the close of the program.
- 11 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development Initiative Research and Spending table, an additional \$48,546,459 or 47.5% of the total approved budget to date, would be included with total NYSERDA commitments.
- 12 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 13 Initiative commitments that are in excess of their total budgets are in anticipation of program attrition. No initiative will have total expenditures in excess of that initiative's total budget at the close of the program.
- 14 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Innovation and Research Initiative Budget and Spending table, an additional \$53,266,510 or 57% of the total approved budget to date, would be included with total NYSERDA commitments.
- 15 The Market Characterization and Design chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 16 Leveraged funds from the National Offshore Wind Consortium initiative are inclusive of contributions from the Department of Energy.

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

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