

Clean Energy Fund Quarterly Performance Report through March 31, 2019

Final Report | May 2019

NYSERDA's Promise to New Yorkers:

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

Mission Statement:

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

Vision Statement:

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

Clean Energy Fund Quarterly Performance Report through March 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, NYSERDA will file a scorecard with the Public Service Commission containing metrics for each investment plan. This data fulfills part of the ordered reporting requirements and will be featured in the public NY Clean Energy Dashboard in early 2019, along with metrics data for utility programs. Over time, NYSERDA anticipates that this report will evolve to focus on higher level summary and qualitative progress information not contained in the scorecard and the NY Clean Energy Dashboard.

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

The report represents quarterly and cumulative activity through March 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 March 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 goals. As previous commission actions have already advanced, energy efficiency is a cornerstone of New York State’s strategies to promote clean energy solutions for consumers while addressing climate change. The recommendations in the comprehensive energy efficiency initiative white paper, issued by the Department of Public Service (DPS) and NYSERDA on April 26, 2018, are guided by a new 2025 energy efficiency target of 185 TBtu of cumulative annual site energy savings that was later defined in a December 13, 2019 Public Service Commission order³. This will accelerate progress towards 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. This nation-leading clean energy and jobs agenda will put the State on a path to carbon neutrality. The Green New Deal proposes the following:

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

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

The CEF portfolios emphasize investments in energy efficiency, and report that NYSERDA will be investing close to \$2 billion in funding over the CEF’s 10-year life span to support energy efficiency, delivering a minimum of 10.6 million megawatt-hours (MWh) in electric savings and 13.4 million MMBtu in non-electric fuel savings. NYSERDA’s approved investment plans as of March 31, 2019 comprise more than \$1.2 billion of investment in energy efficiency across the commercial,

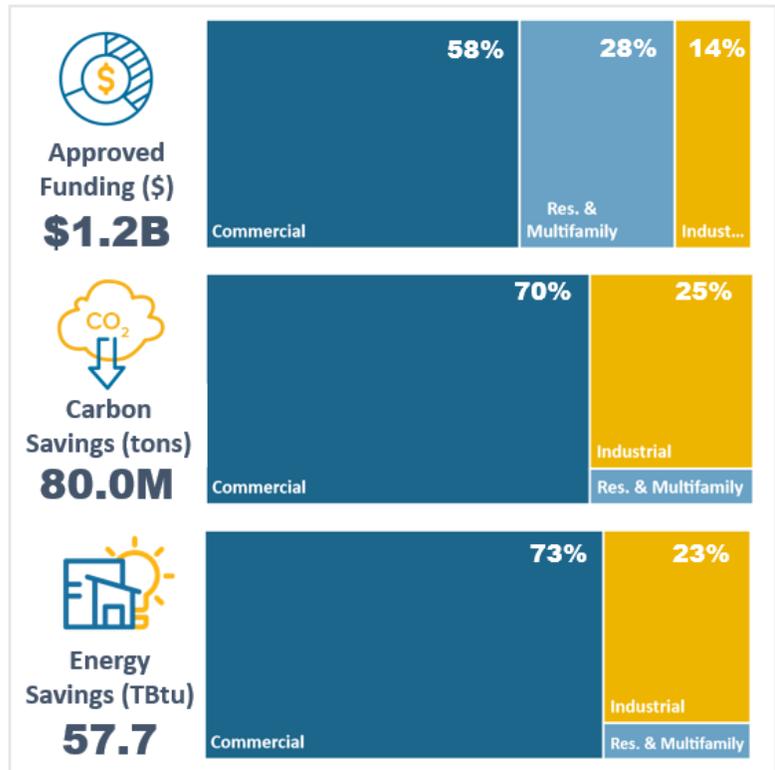
residential/multifamily, and industrial sectors. These approved investments in energy efficiency are expected to drive approximately 80 million metric tons of carbon dioxide equivalent (CO₂e) savings over the life of the installed measures.

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

advancing targeted financial support to help overcome cost barriers to efficiency investments and ease access for private capital to allow new clean energy interventions to scale. The end goal of CEF MD interventions is to reduce the barriers to energy efficiency deployment and adoption, and ultimately, foster self-sustaining markets for energy efficiency.

Energy Efficiency

A snapshot of the progressively-built CEF portfolio's planned contributions towards EE by market sector as of Mar. 2019.



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 March 31, 2019.

Figure 1. CEF Portfolio Expected Investment and Benefits

Toward 10-year minimum goals as of March 31, 2019 (millions).⁵

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

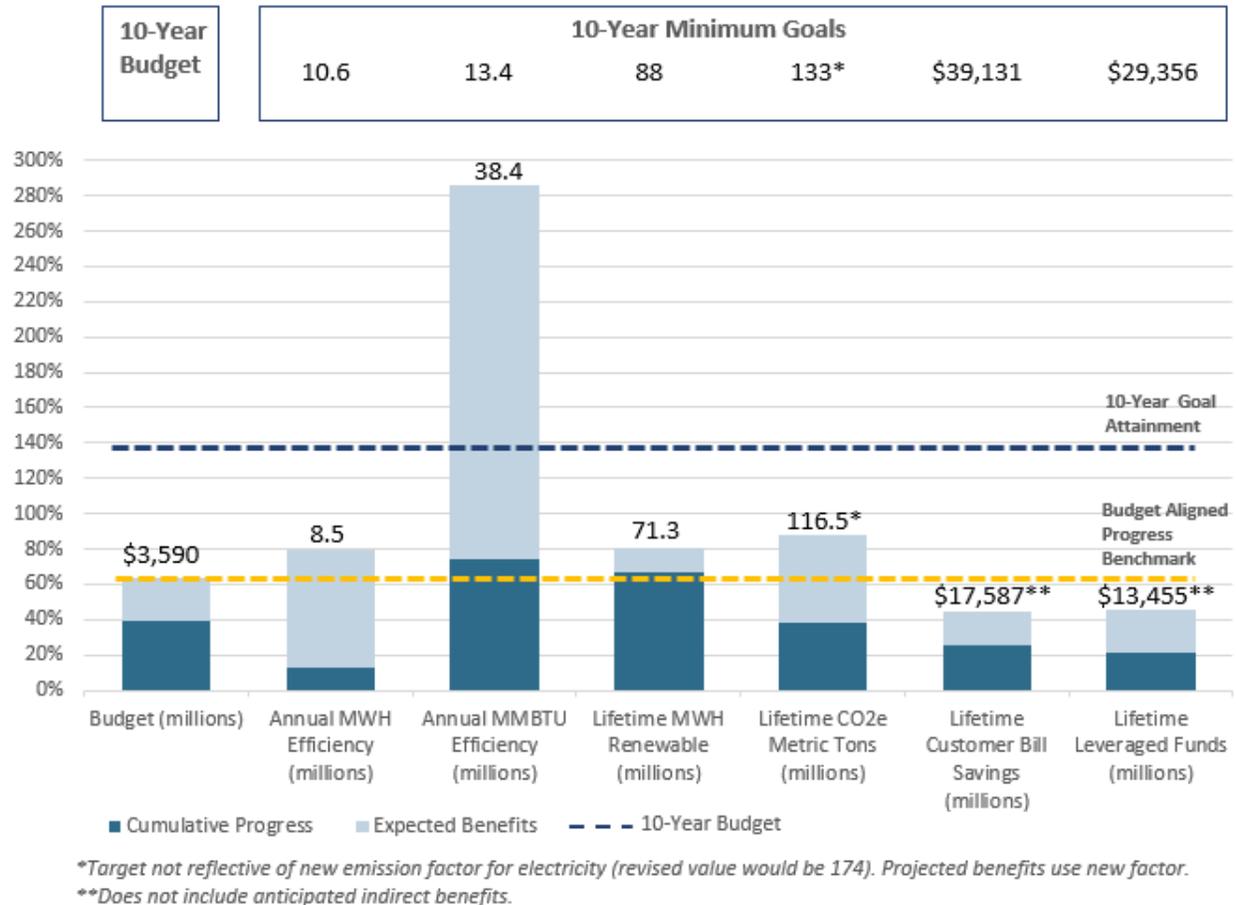


Figure 1 illustrates that deployment of funds is well-aligned with energy and carbon KPI progress at this time.⁶ Here, “Cumulative Progress” (committed budgets and benefits) is combined with “Expected Benefits” (approved but not yet committed budgets and benefits) to demonstrate total progress towards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

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

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

Composition and Management of MD and I&R Portfolios

Through March 2019, 65 MD and I&R initiatives were developed by NYSERDA and filed with the Public Service Commission, of which 61 initiatives are considered “active,” engaging the marketplace. Following the release of the CEF Order, NYSERDA introduced 40 new initiatives, pivoting the organization’s focus toward a market transformation model. In the early years of the CEF, these new initiatives will operate alongside 14 resource acquisition transition initiatives—a purposeful portfolio mix intended to introduce a greater proportion of market-enabling activities without disrupting existing market momentum that may be based on more traditional NYSERDA and utility approaches. As previously noted, energy efficiency strategies serve as the foundation for the CEF, encompassing the majority of initiatives that will achieve energy and carbon targets.

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

Performance to Plan

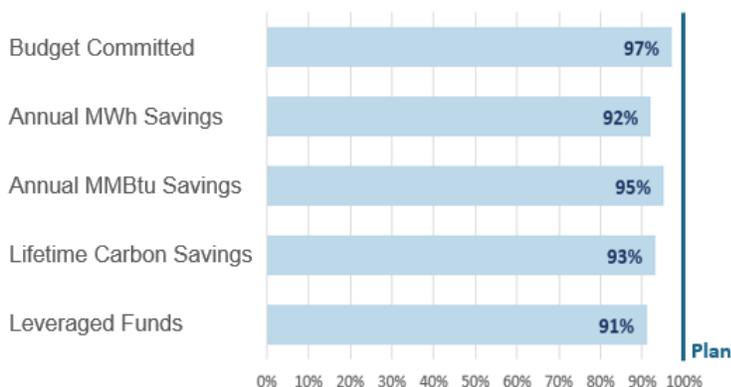
NYSERDA closely monitors MD and I&R portfolio performance, specifically measuring each initiative against its investment plan forecast of benefits over time. NYSERDA’s planned benefits through Q1 2019 are defined as 100% of the 2016, 2017, and 2018 annual planned benefits plus 25% of 2019. However, it is important to note that actual progress may not be equal each quarter of a calendar year. Furthermore, especially for new initiatives in the Market Development portfolio, forecasting market uptake and return on investment can be challenging, so NYSERDA is continually gathering and assessing data on progress and reviewing forecasts for accuracy.

In that spirit and aligned with the preparation of the annual Investment Plan Performance Report (IPPR), NYSERDA has implemented a comprehensive 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 as a whole are likely to finish. Both views are vital to properly growing and guiding the CEF portfolio to achieve CEF Order targets.

Below 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 the early progress against the new 2019 plan. More specifically, the majority of initiatives are in the market and are considered “performers”. As of this quarter, nearly half of the 17 programs falling into the “monitoring performance” category are showing good progress in Q1 and are expected to transition to performers if sustained through Q2.

MD and I&R Portfolio Performance-To-Plan

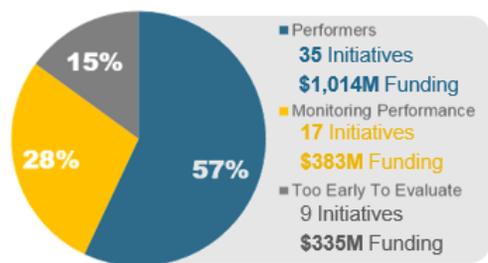
How does performance to date compare with the projected/forecasted results at this point in time?



Portfolio Initiative Performance

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

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



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

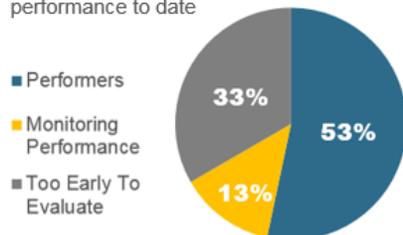
- Performers**
 generally doing well in terms of market uptake and benefits delivery.
- Monitoring Performance**
 may still deliver as planned, but need some degree of confirmation of their market uptake and/or benefits quantification, and potentially some adjustment or corrective action.
- Too Early to Evaluate**
 expected to deliver as planned, but still too close to launch to effectively assess performance or impact

Spotlight On “Top Carbon Impact” Initiatives

In NYSERDA’s MD and I&R portfolio, 15 key initiatives currently account for approximately 85% of the expected lifetime CO₂e benefits and 43% of the approved budget. These top contributors also include a very strong focus on energy efficiency, as do 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 changed since Q4 in that more of the programs vital to NYSERDA’s ability to deliver expected benefits are making strong progress against their plan to date. As described above, the performance plan for every initiative has been updated to incorporate progress to date (2016–2018). Performance shown in the following tables (%) is reflective of progress against one quarter of the new 2019 plan and is not directly comparable to previously reported performance values as the plan baseline has been updated.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Industrial Transition	13%	102%	97%	This initiative continues to provide a strategic glide path for the marketplace to obtain carbon savings in a cost-effective manner as NYSERDA shifts emphasis to new Clean Energy Fund programs.
Energy Management Technology	8%	88%	95%	Previously listed as a program NYSERDA is monitoring for performance, the team has incorporated learning from early market feedback and analysis into the new plan, which is off to a good start in the first quarter. The revised plan expands (increases) expectations for total savings across the program as well as adds funding to support multifamily projects.
Workforce Development Industry Partnerships	7%	83%	75%	Quarterly performance metrics take the annual goal and simply divide by four quarters to measure incremental progress. This method is not always in sync with the program timeline of activity for the year. Q2 is expected to deliver significant progress and early insight into projects looks very promising. NYSERDA expects this program to continue its history of delivering results.
Clean Energy Communities	6%	109%	97%	This initiative continues to meet or exceed program expectations in nearly every area. Participation has been very strong with 257 communities completing at least four actions and officially designated Clean Energy Communities. In total, 538 Communities completed 1518 High-Impact Actions. NYSERDA is in the process of developing an Investment Plan update to better serve communities interested in taking advanced action beyond the original program design.
Commercial and Industrial Carbon Challenge	6%	35%	70%	Previously called the Clean Energy AMP challenge, the program's initial 2018 launch resulted in cost-effective and low \$/ton energy projects. NYSERDA refilled the investment plan in March 2019 to expand market engagement and increase benefits expectations. The attrition of a project in Q1 is an early setback for progress in 2019, but the program is expected to utilize those funds in future projects and meet the expected benefits.
Continuous Energy Improvement	4%	94%	139%	NYSERDA continues industrial stakeholder engagement to build pipeline participation. Benefits are strong on Strategic Energy Management (SEM) and On-Site Energy Manager (OSEM) initiatives, with case studies under development to illustrate successful energy initiatives for dissemination to the marketplace. Energy Management Information Systems participation is lagging and NYSERDA is engaging the market to address barriers.
Electric Vehicles Rebate	3%	97%	98%	Since the Drive Clean Rebate launched in 2017, the market for EVs has grown sharply. However, approximately 40% of EV purchases in NYS since the program launched have not taken advantage of NYSERDA's rebates. NYSERDA recalibrated this investment plan for 2019 operation and beyond, adjusting the timeframe and market engagement plan to achieve similar impact by supporting EV sales over a longer period of time. ROI remains strong for this NYSERDA investment.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Single Family - Low Income	2%	102%	80%	Consistent with previous years, the initiative is performing well and is expected to deliver its planned benefit. Carbon performance at this early stage of 2019 is not concerned with the program's strong track record but will be re-assessed in Q2.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Technical Services	4%	94%	100%	This multisector initiative is a combination of Commercial and Agriculture efforts and it continues to make good progress against its current implementation milestones. While early 2019 results are positive NYSERDA continues to evaluate opportunities to refine each commercial offering to increase uptake with changes anticipated for the second half of 2019.
REV Campus Challenge	2%	100%	58%	REV Campus Challenge is seeing good market uptake, continuing to meet its membership (participation) goal to date. Evaluation activities in 2019 will provide a clearer picture of program impact (improved data starting in Q2) and is anticipated to boost progress against plans. Data remains insufficient to claim the full slate of program benefits.

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

Initiative	Scale	Performance		Initiative Performance Narrative
	% of Portfolio Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Underutilized Product Support	13%	97%	96%	Research on product and appliance standards continued in Q1 2019. The Air Source Heat Pump program is performing as expected. The Advanced Rooftop Unit program was never launched as the desired technology performance levels are not readily available in the supply chain. Alternative structures and technologies to address commercial HVAC are being investigated and NYSERDA will ultimately revise this plan. NYSERDA intends to move components of this program over to the Clean Heating and Cooling section in Q2 2019 to more effectively monitor and manage them.
RetrofitNY—LMI	7%	n/a	n/a	The first six pilot designs were completed and reviewed by external experts including several U.S. National Laboratories. The solutions were presented to key stakeholders like the owners of these buildings and affordable housing agencies. NYSERDA released two new Program Opportunity Notices to support some or all of these six projects through construction by providing gap funding to offset the incremental cost of the deep energy retrofit. NYSERDA also analyzed the results from the six first designs (technical solutions, cost, barriers, etc.) and has refined the program strategy as a result.
New Construction—Market Rate	6%	19%	49%	This program remains in the early stages of launching critical components (Buildings of Excellence, Net Zero) and is anticipating significant progress in 2019, with that progress expected to be recorded later in the year. The reporting method of breaking down annual plans into equal quarters of expected progress will likely show the program behind pace until Q3 and Q4 2019 when projects will begin to be contracted.
Code to Zero	2%	0%	n/a	As evidenced by the activity around implementation milestones (Appendix A), a significant amount of effort is positioning the program to meet a number of Q2 deliverable goals. The program is not expected to begin tracking energy benefits until 2020.
P-12 Schools	2%	97%	95%	Following the mid-2018 launch, this initiative is showing excellent progress against its current implementation milestones. Development of the first Gap Assistance Program has started with an anticipated launch of Q3. Development of the Benchmarking Program was delayed slightly, now expecting to launch Q2 2019.

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

Table 4 provides an accounting of portfolio budget progress to date against the funding approved for implementation. More detailed breakdowns of funding related to Transition, Market Development and Innovation and Research focus areas can be found within Tables 5, 6, and 7 of the report. A detailed summary concludes this overview with benefits progress through March 31, 2019, both annual (Table 8) and lifetime (Table 9).

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

See Endnotes section for more information⁹

Initiative	Total Budget ^a	Budget Approved as of March 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	\$1,529,364,316	64%	\$255,303,207	\$301,568,091	\$556,871,298	36%	\$972,493,018
Innovation & Research								
Program Funds								
NYS Cost Recovery Fee	\$631,672,000	\$359,496,659	57%	\$33,523,502	\$72,871,410	\$106,394,912	30%	\$253,101,747
Administration	\$274,400,000	\$182,669,413	67%	\$73,817,338	\$52,976	\$73,870,314	40%	\$108,799,099
Evaluation	\$130,200,000	\$57,963,825	45%	\$3,007,402	\$4,567,515	\$7,574,917	13%	\$50,388,908
Total	\$3,430,000,000	\$2,129,494,214	62%	\$365,651,449	\$379,059,992	\$744,711,441	35%	\$1,384,782,773

^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 March 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 Expended and Committed Funds.

^g Percentage of the committed budget.

^h Difference between Budget Approved Funds and Committed Funds.

2 Resource Acquisition Transition Initiative Specific Progress

Table 5. Resource Acquisition Transition Initiative Level Budgets and Spending

See Endnotes section for more information¹⁰

Initiative	Budget Approved as of March 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	\$4,540,121	\$6,546,757	\$11,086,878	88%	\$1,564,588
Industrial Transition	\$68,908,453	\$16,032,668	\$37,944,317	\$53,976,985	78%	\$14,931,468
Agriculture Transition	\$3,600,000	\$3,519,932	\$75,146	\$3,595,078	100%	\$4,922
Multifamily Market Rate Transition	\$156,573	\$156,214	-	\$156,214	100%	\$359
Single Family Market Rate Transition	\$24,335,189	\$17,629,573	\$1,553,810	\$19,183,383	79%	\$5,151,806
Commercial New Construction Transition	\$30,683,999	\$2,931,477	\$27,752,522	\$30,683,999	100%	-
Low Rise New Construction Transition - Market Rate	\$4,837,000	\$2,240,420	\$2,103,521	\$4,343,941	90%	\$493,059
Multifamily New Construction Transition - Market Rate	\$2,734,000	\$665,714	\$1,388,553	\$2,054,267	75%	\$679,733
Anaerobic Digesters Transition	\$20,150,000	\$473,491	\$3,721,175	\$4,194,666	21%	\$15,955,334
Small Wind Transition	\$6,090,000	\$2,275,391	\$837,841	\$3,113,232	51%	\$2,976,768
Solar Thermal Transition	\$298,805	\$257,631	\$41,174	\$298,805	100%	-
Combined Heat & Power Transition	\$71,550,000	\$10,685,892	\$49,113,983	\$59,799,875	84%	\$11,750,125
TOTAL	\$245,995,485	\$61,408,524	\$131,078,799	\$192,487,323	78%	\$53,508,162

^a Funds approved by DPS as of March 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 Expended and Committed Funds.

^e Percentage of the committed budget.

^f Difference between Budget Approved Funds and Committed Funds.

3 Market Development Initiative Specific Results

Table 6. Market Development Initiative Budgets and Spending

See Endnotes for more information^{11,12}

Initiative	Budget Approved as of March 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	\$5,434,043	\$2,890,748	\$8,324,791	40%	\$12,325,209
Commercial Chapter						
Energy Management Technology	\$66,605,000	\$4,481,954	\$13,495,747	\$17,977,701	27%	\$48,627,299
Real Estate Tenant	\$25,499,999	\$2,774,821	\$3,486,334	\$6,261,155	25%	\$19,238,844
REV Campus Challenge	\$21,650,002	\$1,340,170	\$6,487,518	\$7,827,688	36%	\$13,822,314
P-12 Schools	\$21,600,000	\$275,910	\$3,999,543	\$4,275,453	20%	\$17,324,547
Commercial Chapter Total	\$135,355,001	\$8,872,855	\$27,469,142	\$36,341,997	27%	\$99,013,004
Industrial Chapter						
Continuous Energy Improvement	\$17,539,000	\$3,642,960	\$3,473,406	\$7,116,366	41%	\$10,422,634
Industrial Chapter Total	\$17,539,000	\$3,642,960	\$3,473,406	\$7,116,366	41%	\$10,422,634
Communities Chapter						
Clean Energy Communities	\$14,218,527	\$3,011,783	\$9,339,507	\$12,351,290	87%	\$1,867,237
Community Energy Engagement	\$4,407,818	\$1,150,180	\$3,257,638	\$4,407,818	100%	-
Communities Chapter Total	\$18,626,345	\$4,161,963	\$12,597,145	\$16,759,108	90%	\$1,867,237
Large-Scale Renewables Chapter						
Offshore Wind Master Plan	\$5,000,000	\$4,870,073	\$129,927	\$5,000,000	100%	-
Offshore Wind Pre-Development Activities	\$10,000,000	\$4,272,581	\$5,492,787	\$9,765,368	98%	\$234,632
Large-Scale Renewables Chapter Total	\$15,000,000	\$9,142,654	\$5,622,714	\$14,765,368	98%	\$234,632
REV Technical Assistance Chapter						
REV Connect	\$3,000,000	\$2,383,277	\$73,153	\$2,456,430	82%	\$543,570
REV Technical Assistance Chapter Total	\$3,000,000	\$2,383,277	\$73,153	\$2,456,430	82%	\$543,570
Energy Storage Chapter						
Reducing Barriers to Distributed Deployment	\$24,450,000	\$4,049,875	\$7,136,367	\$11,186,242	46%	\$13,263,758
Solar Plus Energy Storage	\$40,000,000	-	\$1,536,500	\$1,536,500	4%	\$38,463,500
Energy Storage Chapter Total	\$64,450,000	\$4,049,875	\$8,672,867	\$12,722,742	20%	\$51,727,258
Clean Transportation Chapter						
Electric Vehicles - Rebate	\$39,500,000	\$14,583,190	\$1,470,641	\$16,053,831	41%	\$23,446,169
Clean Transportation Chapter Total	\$39,500,000	\$14,583,190	\$1,470,641	\$16,053,831	41%	\$23,446,169

Initiative	Budget Approved as of March 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	\$595,892	\$4,404,108	\$5,000,000	100%	-
Advancing Agricultural Energy Technologies	\$3,760,000	\$1,929	-	\$1,929	0.1%	\$3,758,071
Agriculture Chapter Total	\$8,760,000	\$597,821	\$4,404,108	\$5,001,929	57%	\$3,758,071
Low- to Moderate-Income Chapter						
Healthy Homes Feasibility Study	\$212,147	\$138,307	\$73,840	\$212,147	100%	-
LMI Multifamily	\$50,189,418	\$3,111,033	\$15,388,160	\$18,499,193	37%	\$31,690,225
Single Family - Low Income	\$169,760,983	\$74,877,081	\$2,408,967	\$77,286,048	46%	\$92,474,935
Single Family - Moderate Income	\$59,500,878	\$28,983,066	\$1,119,762	\$30,102,828	51%	\$29,398,050
Low-Income Forum on Energy	\$1,300,000	\$196,658	\$127,582	\$324,240	25%	\$975,760
RetrofitNY - LMI	\$30,503,500	\$993,674	\$2,567,095	\$3,560,769	12%	\$26,942,731
REVitalize	\$725,000	\$167,752	\$143,028	\$310,780	43%	\$414,220
New Construction - LMI	\$24,784,800	\$319,558	\$1,177,167	\$1,496,725	6%	\$23,288,075
Solar For All	\$21,245,000	\$423,764	\$11,991,487	\$12,415,251	58%	\$8,829,749
Low Rise New Construction Transition - LMI	\$8,487,000	\$1,880,310	\$5,200,206	\$7,080,516	83%	\$1,406,484
Multifamily New Construction Transition - LMI	\$10,879,000	\$1,363,251	\$9,515,750	\$10,879,001	100%	-
Low- to Moderate-Income Chapter Total	\$377,587,726	\$112,454,454	\$49,713,044	\$162,167,498	43%	\$215,420,228
Workforce Development and Training Chapter						
Workforce Development Industry Partnerships	\$21,345,000	\$1,871,207	\$5,049,392	\$6,920,599	32%	\$14,424,401
Clean Technology and Energy Efficiency Talent Pipeline	\$47,000,000	\$46,055	\$1,484,684	\$1,530,739	3%	\$45,469,261
Workforce Development and Training Chapter Total	\$68,345,000	\$1,917,262	\$6,534,076	\$8,451,338	12%	\$59,893,662
Renewable Heating and Cooling						
Heat Pumps and Solar Thermal	\$47,211,685	\$9,550,562	\$12,138,851	\$21,689,413	46%	\$25,522,272
Renewable Heat NY	\$13,487,000	\$3,921,778	\$1,690,401	\$5,612,179	42%	\$7,874,821
Renewable Heating and Cooling Total	\$60,698,685	\$13,472,340	\$13,829,252	\$27,301,592	45%	\$33,397,093
Clean Energy Products Chapter						
Underutilized Product Support	\$46,465,000	\$6,820,614	\$877,884	\$7,698,498	17%	\$38,766,502
Clean Energy Products Chapter Total	\$46,465,000	\$6,820,614	\$877,884	\$7,698,498	17%	\$38,766,502
Multi-Sector Solutions Chapter						
Soft Cost Challenge	\$10,000,000	\$111,916	-	\$111,916	1%	\$9,888,084
Technical Services	\$36,293,312	\$379,409	\$4,566,635	\$4,946,044	14%	\$31,347,268
Commercial and Industrial Carbon Challenge	\$75,222,650	\$67,278	\$9,725,000	\$9,792,278	13%	\$65,430,372
Clean Energy Siting and Soft Cost Reduction	\$8,795,000	\$138,076	\$524,759	\$662,835	8%	\$8,132,165
Pay for Performance	\$55,756,709	\$182,758	\$2,347,329	\$2,530,087	5%	\$53,226,622
Information Products and Brokering	\$8,500,000	-	\$1,536,500	\$1,536,500	4%	\$6,963,500
Multi-Sector Solutions Chapter Total	\$194,567,671	\$879,437	\$18,700,223	\$19,579,660	10%	\$174,988,011

Initiative	Budget Approved as of March 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	\$583,444	\$926,084	\$1,509,528	7%	\$19,490,472
Codes Chapter Total	\$21,000,000	\$583,444	\$926,084	\$1,509,528	7%	\$19,490,472
On-Site Power Chapter						
Fuel Cells	\$15,000,000	\$37,482	\$1,288,750	\$1,326,232	9%	\$13,673,768
On-Site Power Chapter Total	\$15,000,000	\$37,482	\$1,288,750	\$1,326,232	9%	\$13,673,768
New Construction Chapter						
New Construction - Market Rate	\$124,264,632	\$515,736	\$10,145,763	\$10,661,499	9%	\$113,603,133
New Construction Chapter Total	\$124,264,632	\$515,736	\$10,145,763	\$10,661,499	9%	\$113,603,133
Residential Chapter						
Engaging New Markets	\$15,988,015	\$406,849	\$3,336,794	\$3,743,643	23%	\$12,244,372
Residential Chapter Total	\$15,988,015	\$406,849	\$3,336,794	\$3,743,643	23%	\$12,244,372
NYS Cost Recovery Fee Market Development	\$36,571,755	\$3,938,430	-	\$3,938,430	11%	\$32,633,325
Total Market Development	\$1,283,368,830	\$193,894,686	\$172,025,794	\$365,920,480	29%	\$917,448,350

* Totals may not sum exactly due to rounding.

^a Funds approved by DPS as of March 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 Expended and Committed Funds.

^e Percentage of the committed budget.

^f Difference between Budget Approved Funds and Committed Funds.

4 Innovation and Research Initiative Specific Results

Table 7. Innovation and Research Initiative Level Budgets and Spending

See Endnotes for more information^{13,14}

Initiative	Budget Approved as of March 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	\$2,005,888	\$931,997	\$2,937,885	47%	\$3,362,115
High Performing Electric Grid	\$110,500,000	\$4,626,021	\$18,243,122	\$22,869,143	21%	\$87,630,857
Power Electronics Manufacturing Consortium	\$16,700,000	\$14,627,380	\$2,072,620	\$16,700,000	100%	-
Grid Modernization Chapter Total	\$133,500,000	\$21,259,289	\$21,247,739	\$42,507,028	32%	\$90,992,972
Innovation Capacity and Business Development Chapter						
CleanTech Startup Growth	\$58,200,000	\$5,860,919	\$13,479,885	\$19,340,804	33%	\$38,859,196
Manufacturing Corps	\$12,000,000	\$1,042,924	\$3,113,500	\$4,156,424	35%	\$7,843,576
Novel Business Models and Offerings	\$16,100,000	\$33,918	\$2,090,399	\$2,124,317	13%	\$13,975,683
Innovation Capacity and Business Development Chapter Total	\$86,300,000	\$6,937,761	\$18,683,784	\$25,621,545	30%	\$60,678,455
Building Innovation Chapter						
NextGen HVAC	\$15,000,000	\$629,176	\$6,957,164	\$7,586,340	51%	\$7,413,660
Building Innovation Chapter Total	\$15,000,000	\$629,176	\$6,957,164	\$7,586,340	51%	\$7,413,660
Clean Transportation Chapter						
Electric Vehicles - Innovation	\$11,850,000	\$1,118,928	\$6,137,302	\$7,256,230	61%	\$4,593,770
Public Transportation and Electrified Rail	\$18,500,000	\$244,957	\$2,840,746	\$3,085,703	17%	\$15,414,297
Clean Transportation Chapter Total	\$30,350,000	\$1,363,885	\$8,978,048	\$10,341,933	34%	\$20,008,067
Energy-Related Environmental Research Chapter						
Energy-Related Environmental Research	\$30,000,000	\$1,730,303	\$9,204,979	\$10,935,282	36%	\$19,064,718
Energy-Related Environmental Research Chapter Total	\$30,000,000	\$1,730,303	\$9,204,979	\$10,935,282	36%	\$19,064,718
Renewables Optimization Chapter						
Energy Storage Technology and Product Development	\$33,000,000	\$872,101	\$7,711,791	\$8,583,892	26%	\$24,416,108
National Offshore Wind Research & Development Consortium	\$22,500,000	\$246,624	\$87,905	\$334,529	1%	\$22,165,471
Renewables Optimization Chapter Total	\$55,500,000	\$1,118,725	\$7,799,696	\$8,918,421	16%	\$46,581,579
NYS Cost Recovery Fee Innovation & Research	\$8,596,659	\$483,710	-	\$483,710	6%	\$8,112,949
Innovation Capacity and Bus. Dev. Chapter Total	\$359,496,659	\$33,523,502	\$72,871,410	\$106,394,912	30%	\$253,101,747

Table notes are on the next page

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

Table 8. Market Development and Innovation and Research Portfolio

Committed Benefits Progress to Date—Annual

Initiative	Completed Projects through December 31, 2018 with Adjustments	Completed Projects through 1/1/19 - 3/31/19	Total Completed Projects through March 31, 2019	Current Pipeline Through March 31, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Planned Benefits Through Q1 2019	% of Cumulative Annual Planned Benefits Through Q1 2019	Total Cumulative Annual Planned Benefits through 2025	% of Total Cumulative Annual Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	233,766	19,119	252,885	1,082,729	1,335,616	1,449,475	92%	3,711,716	36%
Energy Efficiency (MMBtu)	4,203,157	682,265	4,885,422	5,108,084	9,993,506	10,532,164	95%	25,351,245	39%
Energy Efficiency (MW)	3	-	3	72	77	*	-	*	-
Renewable Energy (MWh)	52,829	3,885	56,714	17,199	73,913	*	-	*	-
Renewable Energy (MW)	44	3	47	4	50	*	-	*	-
CO2e Reductions (metric tons)	671,202	45,763	716,965	721,436	1,438,402	*	-	*	-
Customer Bill Savings (\$ million)	\$67.22	\$9.73	\$76.95	\$165.47	\$242.42	*	-	*	-
Leveraged Funds (\$ million)	\$692.60	\$97.86	\$790.46	\$1,128.61	\$1,919.07	*	-	*	-
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)	\$216.13	\$18.32	\$234.44	\$227.86	\$462.30	*	-	*	-
Total Energy Efficiency (MWh)	233,766	252,885	486,651	1,082,729	1,569,380				
Total Energy Efficiency (MMBtu)	4,203,157	682,265	4,885,422	5,108,084	9,993,506				
Total Energy Efficiency (MW)	3.0	0.0	3	72	75				
Total Renewable Energy (MWh)	52,829	3,885	56,714	17,199	73,913				
Total Renewable Energy (MW)	44	3	47	4	51				
Total CO2e Reductions (metric tons)	671,202	45,763	716,965	721,436	1,438,401				
Total Customer Bill Savings (\$ million)	\$67.22	\$9.73	\$76.95	\$165.47	\$242.42				
Total Leveraged Funds (\$ million)	\$908.73	\$116.18	\$1,024.90	\$1,356.46	\$2,381.37				

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

Table 9. Market Development and Innovation and Research Portfolio

Committed Benefits Progress to Date—Lifetime

Initiative	Completed Projects through December 31, 2018 with Adjustments	Completed Projects through 1/1/19 - 3/31/19	Total Completed Projects through March 31, 2019	Current Pipeline Through March 31, 2019 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Lifetime Planned Benefits Through Q1 2019	% of Cumulative Lifetime Planned Benefits Through Q1 2019	Total Cumulative Lifetime Planned Benefits through 2025	% of Total Cumulative Lifetime Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	3,656,951	303,703	3,960,654	16,001,488	19,962,141	*	-	*	-
Energy Efficiency (MMBtu)	66,533,304	11,087,566	77,620,870	76,166,882	153,787,750	*	-	*	-
Renewable Energy (MWh)	797,868	58,933	856,801	276,120	1,132,921	1,570,409	72%	4,327,791	26%
CO2e Reductions (metric tons)	10,347,620	741,594	11,089,214	10,142,133	21,231,348	22,891,396	93%	51,901,994	41%
Customer Bill Savings (\$ million)	\$1,044.73	\$151.25	\$1,195.98	\$2,402.63	\$3,598.61	\$3,836.12	94%	\$10,296.98	35%
Leveraged Funds (\$ million)	\$692.60	\$97.86	\$790.46	\$1,128.61	\$1,919.07	\$2,051.08	94%	\$6,541.61	29%
Innovation and Research									
Energy Efficiency (MWh)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MMBtu)	-	-	-	-	-	*	-	*	-
Renewable Energy (MWh)	-	-	-	-	-	*	-	*	-
CO2e Reductions (metric tons)	-	-	-	-	-	*	-	*	-
Customer Bill Savings (\$ million)	-	-	-	-	-	*	-	*	-
Leveraged Funds (\$ million)	\$216.13	\$18.32	\$234.44	\$227.86	\$462.30	\$564.23	82%	\$1,653.26	28%
Total Energy Efficiency (MWh)	3,656,951	303,703	3,960,654	16,001,488	19,962,142	-	-	-	-
Total Energy Efficiency (MMBtu)	66,533,304	11,087,566	77,620,870	76,166,882	153,787,752	-	-	-	-
Total Renewable Energy (MWh)	797,868	58,933	856,801	276,120	1,132,921	-	-	-	-
Total CO2e Reductions (metric tons)	10,347,620	741,594	11,089,214	10,142,133	21,231,347	-	-	-	-
Total Customer Bill Savings (\$ million)	\$1,044.73	\$151.25	\$1,195.98	\$2,402.63	\$3,598.61	-	-	-	-
Total Leveraged Funds (\$ million)	\$908.73	\$116.18	\$1,024.90	\$1,356.46	\$2,381.37	-	-	-	-

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

Appendix A. Near-Term Milestones

Near-Term Milestones for Real Estate Tenant

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2016–2020	Tenants will incorporate energy efficiency measures from tenant-specific packages into their designs. Observed gains from the National Resource Defense Council (NRDC), were 25–40% of energy saved above the 2007 code; NYSERDA is projecting gains of 15–20% against the 2010 and 2012 code. The actual savings will be identified through measurement and verification (M&V).	A total of 449 sites are enrolled in the program. Projects have resulted in increased energy efficiency in tenant spaces and have "primed" the sector for more energy efficiency projects. A major PON revision will launch in early April 2019. This revised PON aims to increase participation and drive deeper energy savings in tenant spaces, as well as engage more portfolio owners in the program.
	2018–2024	Building specific packages demonstrate replicability of tenant-specific model to the whole building for development of building-specific packages.	Some energy consultants and building owners have begun to see the value of these generic packages and have started to make use of them. NYSERDA is seeing different use cases emerge and will continue to track this development to inform future program direction. In the new program revision that is currently in the planning stages, NYSERDA is investigating ways to further engage building owners and portfolios specifically, which can benefit from this more standardized approach to identifying energy savings.
	2018–2024	Engagement with stakeholders involves all identified market actors.	Continued engagement with key stakeholders, through outreach and market research efforts, allows continual identification of areas of opportunity to engage tenants in energy efficiency and be responsive to the market. Brokers are a hard to reach audience and NYSERDA is strategizing on how to best engage them in the process—a full day continuing education event is planned for 2019. Large property management companies are another group that NYSERDA plans to engage more consistently to identify opportunities to support their participation in driving EE in commercial tenant spaces. NYSERDA conducted voice of customer with property management firms and also convened a steering committee to assist with efforts of developing the revised PON and providing new perspectives from a new group of stakeholders. This input has been invaluable in ensuring the program is positioned in the most effective way possible, to engage the broad cross-section of stakeholders that are influential actors in the commercial tenant office space market segment.

Near-Term Milestones for Real Estate Tenant Continued

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

Near-Term Milestones for Real Estate Tenant Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018–2024	NYSERDA gathers data on tenant productivity, satisfaction, and wellness through surveys created with each tenant’s Corporate Social Responsibility and Human Resource teams.	To date, project completion dates, and the 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 are 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
	2017–2020	Incentives, Qualified Vendor Listing, and Independent RTEM advisor services help convert prospective customers into committed and installed RTEM projects.	More than 306 buildings are participating in approved RTEM projects with installation/services underway and a project pipeline of 90 additional projects. Projects can take a year to install and then proceed for 1–5 years during which time the program collects data on recommended and installed energy efficiency measures. NYSERDA should start reporting findings in 2020.
	2017–2020	NYSERDA market support and approach attract new RTEM vendors to the New York State market and increase business development investment of all RTEM vendors.	Due to the RTEM program, vendors are looking to initiate new business in New York State. Furthermore, due to the program structure, vendors looking to enter the New York’s market can partner with vendors who already have business in the State and can leverage existing relationships, thus expediting business development opportunities.
	2017–2020	Stimulate interest and market activity with an open enrollment incentive offering for REM.	Contracting with the REM vendors selected through RFP 3681 completed in Q2 2018 and selected vendors are now engaging the market.
	2017–2020	EM Advisors support gaps in market confidence and identify market approaches to eliminating gaps.	EM Advisor has produced a series of customer resources to address gaps in market confidence, as well as leading workshops and individual meetings with EM vendors to discuss gaps in market confidence and the opportunities EM vendors have to address these gaps.
	2017–2020	Peer-to-peer exchanges and EM Advisors transfer learnings across the projects supported by NYSERDA and enhance success.	During the early RTEM project installations, discussions of best practices, client communications, and lessons learned have been reported to the RTEM Advisor.

Near-Term Milestones for Energy Management Technology Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2016–2020	NYSERDA in coordination with industry partners standardizes methodologies for calculating/analyzing costs and savings data.	Working with CUNY BPL (Building Performance Lab) to help RTEM vendors participate in focus groups to develop a MSoC (minimum standards of care). The MSoC will serve as a customer buying guide that will highlight the fundamental RTEM System/Service capabilities and benefits.
	2018–2021	NYSERDA direct supports are ratcheted downward as industry standardization is adopted and results of pilots/studies are shared, broadly increasing customer confidence in the benefits and returns of RTEM.	NYSERDA does not plan on ratcheting down direct supports in the near term but will continue to monitor program and market adoption.
	2018–2021	Methods for capturing the potential benefits of RTEM for operations and maintenance of buildings are standardized and widely available.	NYSERDA is collecting data on projects participating in RTEM and working with qualified vendors on standardizing RTEM data.
	2018–2021	Aggregated data sets and applications of RTEM data are robust enough to enable quick and proper evaluation of energy savings projects, thus removing the need for detailed, building specific energy audits to identify potential energy savings, thereby reducing customer acquisition and project costs.	NYSERDA has begun to collect RTEM project data sets but does not yet have sufficient data to publish anonymized data sets.
	2018–2021	NYSERDA explores the utilization of its RTEM data set to advance efforts at demand reduction and peak-load shaping, as well as its use in predicting and optimizing investments in energy efficiency.	NYSERDA has begun to collect RTEM project data but does not yet have sufficient data to inform peak-load shaping efforts.
	2018–2021	Training platform for facility owners/operators is designed. Training platform is available and used by facility owners/operators.	NYSERDA is working with industry stakeholders and qualified vendors to make progress on building owner and operator training.
	2018–2021	Market penetration of REM insights increases as commercial customers gain awareness of and confidence in remote audit technology for energy efficiency projects and the usage becomes more widespread. Regularly engage with REM vendors to understand changing technology and market landscape.	NYSERDA regularly engages REM vendors to understand changing technology and market insight.

Near-Term Milestones for Energy Management Technology Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018–2021	Continuous input from industry experts and key stakeholders help with test/measure/adjust methods.	Market indicators suggest innovative business models are embedding RTEM system costs into the service costs, also known as Platform as a Service. The RTEM Program Opportunity Notice was revised in September 2, 2016 to allow for these innovative business models to take full advantage of the program. The second revision to the program was made on December 27, 2017 which removed the >50,000 square foot project eligibility requirement to allow smaller sites to be eligible. It was not anticipated that the small sector would be active in the market this early in the program.
	2018–2021	Training platform is available and used by facility owners/operators.	NYSERDA is working with industry stakeholders and qualified vendors to make progress on building owner/operator training.
	2019–2020	RTEM Technical Guidance Document is drafted and tested.	NYSERDA created the initial installment of an “RTEM buying guide” targeted at end-use customers. The first 10 chapters of this buying guide were work-shopped with qualified RTEM vendors and industry experts, and the customer buying guide is now available on the RTEM program website.
	2019–2020	RTEM Technical Guidance Document is published.	NYSERDA is working with industry stakeholders and qualified vendors to make progress on building owner/operator training.

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 108 institutions signed up as of the end of Q1 2019.
	2016–2019	Members make progress and receive recognition as demonstrated by new and revised planning, new commitments to sustainability goals, and clean energy projects started and completed.	<p>REV Campus Challenge annual workshops were held in April and May 2018, with four members hosting and having the opportunity to discuss on-campus projects and have students present.</p> <p>NYSERDA partnered with the NY Coalition for Sustainability in Higher Education (NYCSHE) to highlight NYS institutions that have been awarded or recognized this year for their clean energy efforts at the State of NY Sustainability Conference November 2018.</p> <p>REV Campus Challenge is offering assistance to members to create member spotlights highlighting campus clean energy goals, projects, initiatives. Spotlights can be used by the member institution as marketing collateral and NYSERDA will be posting them on the REV Campus Challenge website, on social media, and partnering with the Association for the Advancement of Sustainability in Higher Education (AASHE), New York Coalition for Sustainability in Higher Education and other high visibility market stakeholder platforms to recognize and share member efforts. Twelve member spotlights are in development as of the end of Q1 2019.</p>

Near-Term Milestones for P-12 Schools

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Launch a clean energy benchmarking open enrollment program.	The program will launch in Q2 2019.
	2018	Begin examining efforts to minimize hard and soft costs associated with delivering technical analysis for schools such as energy master plan development.	The examination efforts to minimize hard and soft costs associated with delivering technical analysis for schools started in Q4 2018. An Energy Master Plan outline was created to help guide commercial customers on the development of an Energy Master Plan. In addition, NYSERDA met with the State Education Department—Office of Facilities Planning to discuss how the FlexTech Program could support the development of Energy Master Plans for the P-12 sector.
	2019	Launch a competitive solicitation to provide gap assistance.	The competitive solicitation for gap assistance will launch in Q3 2019.

Near-Term Milestones for Continuous Energy Improvement Initiative

On-Site Energy Manager

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2017 and 2018	A credible business case that proves the benefits of on-site energy management in industrial facilities. Large sites will save at least 1,200 MWh and 15,000 MMBtu annually. Medium sites will save at least 500 MWh and 5,000 MMBtu annually.	Business cases that prove the benefits of on-site energy management are shown in the final deliverables (final reports, case studies, and road maps). Final deliverables from first six projects have been approved and average values exceed these per site targets.
	2017 and 2018	Business case content for consultant marketing plans, which address this need in the industrial market.	Case studies and road maps will be developed for each project and distributed to the market. Six case studies and road maps have been approved to date.
	2018	Successful dissemination of training, road maps, case studies, and vetted consultant lists creates both supply for On-site Energy Manager by qualified technical consultants and demand for the role at industrial sites.	

Near-Term Milestones for Continuous Energy Improvement Initiative

Strategic Energy Management

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

Near-Term Milestones for Continuous Energy Improvement Initiative

Energy Management Information Systems

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.	A delay releasing the solicitation has resulted in residual delays of achieving subsequent milestone targets.

Near-Term Milestones for Clean Energy Communities

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2016–2019	Eighty communities complete and demonstrate replicability of four out of 10 high-impact actions and submit successful grant applications to the Clean Energy Communities Program to complete innovative clean energy projects.	<p>Outreach contractors are actively engaging communities. Many local governments are working to complete High-Impact Actions. As of March 31, 2019, 257 communities completed at least four actions and are officially designated Clean Energy Communities. In total, 538 Communities completed 1518 High-Impact Actions, 1323 of which were completed after program launch ('new').</p> <p>Anticipated savings from the 1323 'new' completed High-Impact Actions and the 210 grant projects that are either awarded or underway (when combined with savings reported in Regional Greenhouse Gas Initiative (RGGI) reporting), include the following:</p> <ul style="list-style-type: none"> • 202,243.24 MWh Efficiency Savings • 110,786.06 MWh Renewable Generation • 94.36 MW Renewable Generation • 774,581.71 MMBtu Natural Gas Savings • 32,051.75 MMBtu Gasoline Savings • 172,964.71 MMBtu Distillate Fuel Savings
	2016–2019	NYSERDA conducted market research on impact of initial uptake of high-impact actions and has adjusted the Clean Energy Communities program accordingly. NYSERDA will continuously compile feedback from communities on high-impact actions and associated tools and resources and adjust accordingly.	NYSERDA recently released minor revisions to the Clean Energy Communities program to better accommodate the needs of communities and to clarify program requirements. In addition, NYSERDA is in the process of developing an Investment Plan update to better serve communities interested in taking advanced action beyond the original program design.

Near-Term Milestones Community Energy Engagement

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	NYSERDA initiates awards proposals for regional-specific pilot projects.	NYSERDA anticipates that this activity will be developed in Q2 2019 and executed in Q3 2019.
	2018–2020	NYSERDA develops one or more case studies on regional-specific pilot projects and other support provided through the base activities.	Outreach kicked off in May 2018. NYSERDA expects to begin developing case studies in mid-to-late 2019. The first case studies will likely be focused on participant successes, while the regional-specific pilot case studies will likely be delayed until post-pilot launch, sometime in late 2019.
	2019	Conduct surveys of customers assisted by local-based organizations (LBO) to assess performance.	Outreach kicked off in May 2018. NYSERDA expects to begin conducting surveys in late 2019 after the program has been up and running for close to two years.

Near-Term Milestones for Offshore Wind Pre-Development Activities

Complete ✓	Time Frame	Milestone	Explanation of Progress
	n/a	Reports providing site-specific data needed to support detailed siting, design, and permitting of Offshore Wind project(s).	Working on plan for deploying one or more buoys for measuring wind, wave, and other data, deployment expected in late 2019. As of Q1 2019, buoys are undergoing calibration process in the North Sea.

Near-Term Milestones for REV Connect

All near-term milestones have been completed.

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

All near-term milestones have been completed.

Near-Term Milestones for Solar Plus Energy Storage

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018–2020	Award incentives to solar plus storage projects.	The solar plus storage offering became available under NY-Sun on October 25, 2018. No awards have been made yet. Utility interconnection acceptance is a requisite for solar plus storage projects to apply to NY-Sun.
	2019–2023	Completion of solar plus storage projects.	Project completion is not expected until Q2 2019 as application approvals began in Q1 2019.
	2019–2020	Publish case studies with learnings from initial solar plus storage projects.	Case studies will be developed and published after appropriate projects are complete, anticipated Q2 2019.
	2019	Participation in IPWG and ITWG meetings throughout the year to address issues of adding storage to solar.	Solar plus storage issues are on the Interconnection Technical Working Group (ITWG) agenda in 2019. Additional topics important to solar plus storage are being drafted and considered for future IPWG/ITWG meetings.

Near-Term Milestones for Electric Vehicles—Rebate

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2017	EV Rebate Program Launch.	As of March 31, 2019, more than 600 car dealers signed up for the program and applications for more than 14,000 rebates have been approved, totaling more than \$20 million (including both CEF and non-CEF funding).

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Review and approve Consortium business plan to attain financial self-sustainability in 2023.	The Executive Director of GLASE is working to complete the business plan. The plan is linked with the marketing plan that was being refined in 2018. The Rensselaer Polytechnic Institute principal investigators left in February, causing some delays. It is anticipated that the business plan will be updated in Q2 2019.
	2018	Monitor small (6,000 square feet) pilot demonstration of a basic light and shade control system.	The principal investigator has located a new site and is continues to work on a model will be able to provide baseline data (based on actual from the site) to keep the initial pilot demonstration schedule.
	2018	Publish case study of demonstration.	Case study dependent on small pilot demonstration. Progress continues the demonstration project.
	2019	Monitor small (6,000 square feet) pilot demonstration of CO ₂ supplementation integrated with the light and shade control system.	The principal investigator has located a new site and continues to work on a model that will be able to provide baseline data (based on actual from the site) to keep the initial pilot demonstration schedule.
	2019	Monitor large (20,000 square feet) pilot demonstration of a basic light and shade control system.	The principal investigator at Cornell secured a large demonstration site and an agreement has been signed. This site is ideal because it enables a side-by- side baseline data and modified environment data collection.
	2019	Publish case study of demonstrations.	The case study will be published once the demonstration data has been collected and analyzed.

Near-Term Milestones for Advancing Agricultural Energy Technologies

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Contract with teams to demonstrate underused and emerging technologies.	Contracting will begin once awards from solicitation (PON 3809) have been made.

Near-Term Milestones for RetrofitNY—LMI

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

Near-Term Milestones for REVitalize

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	NYSERDA receives feedback from community groups and on the toolkit.	NYSERDA is working on processing feedback and input to develop the toolkit.
	2019	Completion of five community energy projects.	NYSERDA funded four REVitalize projects. Therefore, there will only be four community energy projects completed. The City of Utica completed the planning and analysis of their local microgrid system in March 2019. The city along with its' subcontractor continue to pursue the implementation of the Project. The Utica Municipal Housing Authority will own the system and serve the LMI residents of Adrian Terrace. Co-locations are Proctor & Columbus High School and the Armory. The projected annual savings of the system is 9,000 MMBtu.

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.	Current contract runs through August 31, 2019. Contract extension process will be initiated in Q2 2019.
	2019	Implement a series of regional meetings across the State in Q2 of 2019.	LIFE 2019 Regional Meeting Series planning is currently underway. Seven meetings are scheduled throughout the State in May and June 2019.

Near-Term Milestones for Healthy Homes Feasibility Study

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Pilot design is complete.	Completion of pilot design is expected by Q3 2019.
	2017	Commencement of pilot activities.	Pilot implementation is expected to begin in Q3 2019.

Near-Term Milestones for Single Family—Low Income

All near-term milestones have been completed.

Near-Term Milestones for Single Family—Moderate Income

All near term milestones have been completed

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

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

Near-Term Milestones for Solar for All

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Execute agreements with community solar projects for capacity dedicated to low-income subscriptions.	First round solicitation responses were received in Q3 2018, and agreements with nine selected community solar projects were executed in Q4 2018.
	2018–2020	Issue additional solicitation(s) for community solar projects, if needed.	Additional solicitations were not issued in Q1 2019.
	2018–2020	Execute additional agreements with community solar projects for low-income subscriptions, if needed.	Additional agreements were not executed in Q1 2019.

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 underway in all six business case demonstration projects. Data collection period extend for some projects to include a second winter of energy use. Final or interim reports, in some cases, are expected to be completed by Q2 2019.
	2018–2020	Develop and implement marketing plan to share results of business case demonstrations and building operations and maintenance project results. Share intervention templates with industry.	NYSERDA is developing a marketing plan to share the results of the projects and business case demonstrations. Two business cases are completed and will be added to the Work Force Development website in Q2 2019.

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

All near-term milestones have been completed.

Near-Term Milestones Heat Pumps and Solar Thermal

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Launch ground-source heat pump (GSHP) contractor mentoring program.	GSHP market partners have signaled that this timing is premature and prefer a pilot in a geographical area that can be expanded statewide.
✓	2018	Complete assessment of M&V methodologies for system performance and share with market participants.	Document Standardized Measurement & Verification Requirements for Ground Source Heat Pumps is complete and accessible at https://www.nypa.gov/about/geothermalchallenge on the FAQ and Resources page for the Geothermal Clean Energy Challenge.
	2019	Disseminate Renewable Heating & Cooling (RH&C) case studies and design and installation best practices to the market.	Design and Installation practices checklist has been developed. It will likely be posted on GSHP program website in Q2 2019. Case studies likely won't be developed until projects are installed that result from the Geothermal Clean Energy Challenge.
	2019	Develop aggregated procurement for colleges and universities and State and local buildings.	One contractor will be used to perform screenings. A separate contractor may be procured to perform American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) Level 2 audits, and schematic designs for program participants. Determination of whether aggregation strategies can be applied to eventual construction of projects is being explored.

Near-Term Milestones Renewable Heat NY

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 & the Northeast States for Coordinated Air Use Management (NESCAUM) on public health studies with an update to be provided in Q2 2019.
	2018	Contract with manufacturers selected under competitive solicitation.	This will begin once the competitive solicitation has been released and proposals selected. Estimated Q3 2019.
	2019	Issue competitive solicitation to seek proposals from advanced biomass heating equipment manufacturers on technology improvements.	A future round of PON 3519 Next Gen HVAC will solicit proposals for advanced biomass improvement. Estimated Q3 2019.
	2019	Reissue workforce development program based on market feedback.	RHNY needs will be included in Clean Heating & Cooling Workforce Development strategy which is under development.

Near-Term Milestones Underutilized Product Support

See Endnotes section for more information¹⁵

Complete ✓	Time Frame	Milestone	Explanation of Progress
n/a	2017	Launch open enrollment incentive program for Advanced Rooftop Units (ARTU).	The ARTU program has been put on hold pending additional research and market engagement. The initiative was intended to promote the stocking and sales of the most efficient and controllable RTUs on the market, but the intended technology performance levels are not readily available in the supply chain at this point. NYSERDA is looking at alternate structures and technologies to address commercial HVAC, including advanced controls retrofits and variable refrigerant flow systems. NYSERDA is reviewing results of a Market and Technical Analysis of VRF Heat Pump Technology and upon completion will explore options for promoting this technology. Work is still under way to determine feasibility of establishing an Advanced Commercial HVAC Initiative.
	2017	Case studies developed and deployed in the market, along with current resources from regional and national organizations.	Initially, NYSERDA deployed best practice resources for contractors from the Northeast Energy Efficiency Partnership. The development of case studies to exhibit savings potential will follow. A total of 50 NYSERDA-funded ASHP demonstration projects have been awarded, with 16 currently functioning and monitoring data. Compiling viable results from these projects for dissemination has pushed development time of case studies to Q2 2019.
	2018	Efficiency and cost calculator released in the market.	Working to assess current market offerings across technologies. It is most likely that a tool will need to be updated or developed to meet needs. Any tool developed will be applicable across technologies to maximize impact for contractors.

Near-Term Milestones for Underutilized Product Support continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Mapping tool for Air Source Heat Pumps (ASHP) potential released in the market.	The goal of this work is to test methods for collecting and processing publicly available data that can be used to identify high-potential opportunities for efficiency retrofits in advance of end of life replacement. Testing of the product demo began in Q3 2018 with a roll out to HVAC partners in Q2 2019.
	2018	Issue competitive solicitation to identify and test alternative business models.	NYSERDA is currently acquiring feedback from key market actors and drafting a competitive solicitation to test alternative business models that drive adoption of energy efficiency through an "As a Service" market offering. Targeting a Q3 2019 release.
	2019	Issue open solicitation to expand alternative business models based on results from competitive solicitation in 2018.	This open solicitation is dependent on the outcome of the Business Model Innovation solicitation that is targeted to be released in Q3 2019.

Near-Term Milestones for Energy Efficiency Soft Cost Challenge

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

Near-Term Milestones for Technical Services

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

Near-Term Milestones for Commercial and Industrial Carbon Challenge

Complete ✓	Time Frame	Milestone	Explanation of Progress
	(Annually through 2022)	Issue Competitive Solicitation	The solicitation will be issued in Q2 2019
	(Annually through 2022)	Contract with selected participants.	Contracting will begin after awards from the solicitation have been made.
	(Annually through 2026)	Conduct M&V for implemented projects. Assess program performance and participant satisfaction to test, measure, and adjust on an annual basis.	M&V and assessment of program performance and participant satisfaction will occur after projects have been completed

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Contract with a pool of contractors and organizations.	All contracting has been completed.
	2018	Complete trainings for technical assistance providers.	NYSERDA does not consider trainings necessary at this time however this may be considered in the future.
	2018	Launch a statewide outreach and education campaign to publicize soft cost solutions and technical assistance services, including convening regional meetings for large scale renewable (LSR) stakeholders.	NYSERDA completed its first Wind Workshop in Q1 of 2019 and plans to conduct the same outreach for 2019 Large Scale Renewables Solicitation in the fall. NYSERDA is also starting to engage with host towns on Battery Energy Storage Workshops in Q1 of 2019, with additional workshops planned for Q2 and Q3 of 2019.

Near-Term Milestones for Pay for Performance

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Release RFP and execute contract to procure advanced measurement and verification (AMV) software solution.	The RFP to select an AMV Solution Provider was launched on August 17, 2018 and a top ranked proposer was selected. The contract was executed in January 2019.
	2018	Release Phase 1 procurement document(s) with utility co-administrators to solicit aggregator bids.	Procurement documentation is currently under development by NYSERDA and Utility Administrators. It is anticipated that the commercial Portfolio Manager Request for Proposal (RFP) will be released in June 2019 and the residential Portfolio Manager RFP will be released Q3 2019.
	2019	Execute Phase 1 aggregator contracts and begin Phase 1 work.	This will be completed once the Phase 1 procurements documents have been released.
	2019	Adjust design elements based on market feedback and prepare for Phase 2 solicitations.	This will be completed after Phase 1 work has begun.

Near-Term Milestones for Code to Zero

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Issue NY Stretch-Energy stretching off IECC22 2018.	Legal review is ongoing with a potential preemption issue being researched. Expected completion in Q2. Release of NYStretch to public is on hold until the review is completed. NYStretch cost effectiveness analysis is in progress and is expected to be completed in early Q2.
	2018	Issue Pilot #1 solicitation to pilot alternative enforcement structures.	NYSERDA began work on this milestone in Q2 2018. Voice of customer work began in Q4 2018 and is ongoing. NYSERDA conducting interviews with large, medium and small municipalities, attempting to sample from a number of regions in the state and targeting representatives from building departments as well as elected officials. The solicitation is anticipated to be issued in late Q2 2019.
	2018	Issue Pilot #2 solicitation for pilot communities to adopt NY Stretch-Energy (IECC2018).	Voice of customer will continue through Q2 2019. Solicitation development will begin after cost effectiveness analysis and legal review are completed, expected in Q2 2019 with projected issuance in early Q3 2019.

Near-Term Milestones for Code to Zero continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Finalize plan to codify stretch-to-zero as baseline by 2030.	Part of the New Buildings Institute (NBI) contract Policy Analysis and Development to Support NY Climate Objectives works on a roadmap started during Q3 2018; NBI is actively engaged with cross-functional NYSERDA working on the Roadmap. Expected completion in late 2019.
	2019	Issue solicitation for audience-specific training content and approaches.	The bid request will be issued throughout the code cycle to the codes training pool in RFQL 3711, with the first bid request to be issued in Q2 2019. The first bid request will focus on training for ongoing Energy Code Enforcement Training as part of NYSERDA's Clean Energy Communities program. A second bid request will address broader market needs. NYSERDA will continue to solicit feedback from stakeholders and engage with participants in order to optimize training offerings throughout the code cycle.
	2019	Contract Pilot(s) #1 for alternative enforcement business structures.	Contract will occur after solicitation has been released and awards made.
	2019	Contract Pilot(s) #2 for adoption of NY Stretch-Energy (IECC2018).	Contract will occur after solicitation has been released and awards made.
	2019	Contracts for audience-specific training content and approaches.	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.	Three applications have been received and one contract has been initiated.
	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.
	2019	Confirm first annual performance of fuel cell operation. This will start in 2019 and continue in 2020 based on timing of applications.	One contract has been issued and this installation may be operational by February 2020.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2019	Issue first competitive solicitation for Buildings of Excellence Competition.	The competitive solicitation was launched on March 6, 2019, with Governor Cuomo announcing the \$30-million-dollar program. Applications are being accepted through June 4, and awards are expected to be announced in the summer of 2019.
	2019	Contract with awardees for Buildings of Excellence Competition.	It is anticipated that the contracts for the Buildings of Excellence competition will be completed in Q4 2019.
	2019	Issue solicitation to launch Simplified Design and Tools: Model Measure Packages activity.	The vendors selected under Request for Qualification (RFQL) 3711, which will provide the pool of vendors that will complete the analysis of high-performance projects and identify model measure packages, signed contracts with NYSERDA in Q4 2018. NYSERDA anticipates the release of the proposal soliciting these vendors to analyze measure packages to be in Q4 2019.
	2019	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Contract(s) will follow the release of the proposal to the select successful RFQL 3711 vendors.
	2019	Issue mini-bid for technical reviewers through existing NYSERDA umbrella contracts to begin performance analysis to assess project performance.	Contracts with vendors will follow the solicitation.
	2019	Contract with technical reviewers for Performance Analysis to assess project performance.	NYSERDA is evaluating timing of this analysis based on project complete estimates and expects that a proposal to will be released in Q2 2019.

Near-Term Milestones for Market Rate New Construction

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Issue first competitive solicitation for Buildings of Excellence Competition.	The competitive solicitation was launched on March 6, 2019, with Governor Cuomo announcing the \$30-million-dollar program. Applications are being accepted through June 4, and awards are expected to be announced in the summer of 2019.
	2018	Contract with awardees for Buildings of Excellence Competition.	It is anticipated that the contracts for the Buildings of Excellence competition will be completed in Q4 2019.
	2019	Issue solicitation to launch Simplified Design and Tools: Model Measure Packages activity.	The vendors selected under RFQL 3711, which will provide the pool of vendors that will complete the analysis of high-performance projects and identify model measure packages, signed contracts with NYSERDA in Q4 2018. NYSERDA anticipates the release of the proposal soliciting these vendors to analyze measure packages to be in Q4 2019.
	2019	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Contract(s) will follow the release of the proposal to the select successful RFQL 3711 vendors.
	2019	Contract with awardees for Net Zero Energy/Carbon Competition.	Award Letters were issued for ten proposed projects on December 10, 2018, following announcement of the Regional Economic Development Council awards. All awards have been made, and it is expected that most contracts will be finalized in Q2 2019.
	2019	Issue mini-bid for technical reviewers through existing NYSERDA umbrella contracts to begin performance analysis to assess project performance.	Contracts with vendors will follow the solicitation.
	2019	Contract with technical reviewers for Performance Analysis to assess project performance.	NYSERDA is evaluating timing of this analysis based on project complete estimates and expects that a proposal to will be released in Q2 2019.

Milestones for Market Rate New Construction Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Issue solicitation for Simplified Design and Tools: Integrated design practices advisor for first-time developers.	<p>Revised solicitations were released in January of 2019 for the New Construction Housing programs providing additional incentives for Primary Energy Consultants to offer Project Mentoring Services. Access to these services is currently being offered to Raters, Builders, and Developers through PON 3716 Multifamily New Construction Program and PON 3717 Low-rise Residential New Construction Program.</p> <p>NYSERDA's Portfolio Owner Support program, which will work with large developers or portfolio owners to define Net Zero, and to build, facilitate, and operate facilities to achieve net zero performance, was launched in Q4 2018. The program received two applications in Q4 2018, which are currently being evaluated for eligibility.</p>
	2019	Contract with awardees for Simplified Design and Tools: Integrated design practices advisor for first-time developers.	<p>Primary Energy Consultants (PES's) will enter into contract with NYSERDA or modify their existing contract through RFP 3771. This program is an open enrollment offering, and contracts to be eligible to provide Mentoring Services will be entered into on a rolling basis. Primary Energy Consultant-Mentoring Services will be accessed through NYSERDA's Standard Offer incentive programs, and the contracts for these services will be rolled into the project specific award letters offered for individual projects.</p> <p>The Portfolio Owner Support program is expected to contract with all program awardees by Q4 2020.</p>
	2019	Issue second Solicitation for Net Zero Energy/Carbon Competition.	<p>Revised Net Zero Energy for Economic Development competition is in process. The program will be expanded in the 2019 offering to provide assistance for community-level net zero planning.</p>
	2019	Contract with awardees for second Net Zero Energy/Carbon Competition.	<p>Contracting will occur after awards have been made, currently expected in early 2020.</p>

Near-Term Milestones for Information Products and Brokering

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Solicitation issued to support Asset Data Matching.	Solicitation for contractor to support Asset Data Matching pilot is drafted and shared with key stakeholders on project. Expected release of solicitation is Q2 2019.
	2019	Solicitation issued to support DER Data Platform pilot.	Solicitation is drafted and on track for release in Q2 2019.
	2019	Initial Asset Data Pilot(s) are completed.	Work on target for pilot to be complete by end of 2019.
	2019	Roll out heat pump Customer Targeting Tool to 100 contractors outside heat pump program, including residential EE contractors and initial P4P aggregators.	On track to achieve this milestone by end of 2019. Work is underway to optimize Customer Targeting Tool for residential EE contractors and P4P aggregators.
	2019	Issue award for the development of value proposition calculator to support adoption of energy efficiency in the small commercial sector.	On track for completion by end of 2019. Solicitation is currently in development.
	2019	Host first hackathon, with a focus on identifying solutions that overcome barriers to adoption of energy efficiency and clean energy for property managers of commercial, multifamily, and industrial building portfolios. Attract 75 proposals. Issue 1-4 awards to support market demonstration of solutions by developed winners.	On track to host first hackathon by end of year. NYSERDA is engaged in partnership discussions with key market actors.

Near-Term Milestones for Engaging New Markets

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Develop a package of energy efficiency related trainings for market actors prior to pilot implementation.	Drafts were completed in Q1 2019 and final edits are underway in preparation for pilot launch in Q2 2019.
	2018	Launch first of targeted consumer education and awareness campaigns.	Strategy planning is underway; launch is expected in early Q2 2019.
	2018	Implement initial pilot for contractors delivering home energy ratings as a sales tool.	Implementation planning and contracting processes are underway with launch expected in Q2 2019.
	2018	Implement initial pilot to embed home energy ratings into real estate transactions.	Implementation planning is underway; solicitation and contract work also underway.

Near-Term Milestones for High-Performing Grid

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Issue targeted competitive solicitation #2, guided by utility supplemental distributed system implementation plans (DSIPs) and the NY Grid Modernization Roadmap.	Solicitation delayed allowing broad competitive solicitation #3 to be issued. Solicitation #2 anticipated to be released in Q2 2019.
	2017	Enter into contracts for projects awarded under the targeted competitive solicitation #2.	Contracting will begin once solicitation #2 is released in Q2 2019.
	2018	Identify technology gaps necessary to support community grid operation based on completed NY Prize Stage 2 evaluations.	NY Prize Stage 2 project teams are actively working to complete Stage 2 deliverables by Q2 2019.
✓	2018	Enter into contracts for projects awarded under the broad competitive solicitation #3.	Awards made and contracts initiated between NYSERDA and Awardees.
	2018	Issue targeted competitive solicitation #4.	Estimated to be released in mid-2019.
	2019	Enter into contracts for projects awarded under the targeted competitive solicitation #4.	Contracts will be awarded after the solicitation is released.
	2019	Issue broad competitive solicitation #5.	The solicitation will be released in Q2 2019.
	2019	Enter into contracts for projects awarded under the broad competitive solicitation #5.	Contracting will be made on a continuous basis and is expected to continue through 2020.

Near-Term Milestones for High-Performing Grid Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Issue broad competitive solicitation #5.	The solicitation will be released in Q2 2019.
	2019	Enter into contracts for projects awarded under the broad competitive solicitation #5.	Contracting will be made on a continuous basis and is expected to continue through 2020.

Near-Term Milestones for Power Electronics Manufacturing Consortium

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Consortium expanded to include at least four partner companies/customers.	Two consortium partners confirmed. Negotiations are in progress with additional partners.
	2018	ISO-9001 certification complete.	ISO-9001 certification has been postponed till new Tier 1 Partner is in place to replace GE.
✓	2018	AEC-Q101 qualification complete.	AEC-Q101 qualification is complete.
	2018	Consortium expanded to include at least eight partner companies/customers.	Two consortium partners confirmed. Negotiations are in progress with additional partners. Waiting to add additional partners till new Tier 1 Partner is on board.
	2019	Consortium expanded to include at least 12 partner companies/customers.	

Near-Term Milestones for Cleantech Startup Growth Incubators

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

Near-Term Milestones for Cleantech Startup Growth Ignition Grants

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

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Award(s) from solicitation for POCCs contracted.	No awards were made from the original solicitation, and the solicitation was reissued January 7, 2019.
✓	2019	Competitive solicitation for POCC support services launched.	The solicitation launched in early Q1 2019.
	2019	Award(s) from solicitation for POCC support services contracted.	Awardees will be chosen in early Q2 2019 and will be contracted soon thereafter.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Award(s) from solicitation contracted.	Contract was fully executed November 20, 2018.
✓	2018	Company reviews initiated.	Company reviews were initiated shortly after the contract was fully executed November 20, 2018.
✓	2018	Company engagements initiated.	Company engagements were initiated shortly after the contract was fully executed November 20, 2018.
✓	2018	Office hours and expert presentations initiated.	Office Hours and Expert Presentations were initiated shortly after the contract was fully executed November 20, 2018.
	Each year starting in 2018	Practice Pitch, SWAT Team, and other engagements initiated.	Practice Pitch, SWAT Team, and Other Engagements were initiated shortly after the contract was fully executed November 20, 2018.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Competitive solicitations launched.	Solicitation(s) expected to launch Q2 2019.
	2018	Awards from solicitations contracted.	Awards will be made after launch of the solicitation.

Near-Term Milestones for Cleantech Startup Growth 76 West

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Awards from third round contracted.	Contracting for awards from third round began in Q4 2018 and is expected to be completed in Q2 2019. There have been delays in contracting with out-of-state companies.
	2019	Awardees from fourth round selected.	Awards are expected to be made in Q4 2019.
	2019	Awardees from fourth round contracted.	Contracting will occur shortly after awards are made.

Near-Term Milestones for Cleantech Startup Growth Innovation Advisors

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

Near-Term Milestones for Novel Business Models and Offerings

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with first-round NBMO awardees.	Contracting will occur following review and funding approval of 20 proposals received November 26, 2018.
	2018	Contract with second-round NBMO awardees.	Contracting will occur after proposal reviews for the second-round due date of May 23, 2019.
	2019	Conduct preliminary program process assessment, examining the distribution of proposers, scope of proposed impact, and marketing and selection processes through first two rounds, and revise the solicitation as necessary.	The assessment will be conducted after awards from the second-round have been made.

Near-Term Milestones for NextGen HVAC

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Contract projects from first technology challenge.	All but two of the awards made under Round 1 have been contracted.
	2018	Contract projects from second technology challenge.	All but two of the awards made under Round 2 have been contracted.
	2018	Review portfolio of activities, benefits to date, solicit market input and reassess technology challenges areas and targets.	A review will be conducted once awards have been made from the second technology challenge.
	2019	Contract projects from third technology challenge.	Contracting will begin once awards have been made.
	2019	Issue fourth technology challenge.	The fourth technology challenge is scheduled to be issued in July 2019
	2019–2020	Contract projects from fourth technology challenge.	Contracting will begin once awards have been made.

Near-Term Milestones for Electric Vehicles - Innovation

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Contract with projects awarded in first competitive solicitation for the development and demonstration of EV-enabling technologies.	Contracts are being negotiated with initial award recipients from PON 3578, Round 1. Through Q1 2019, two contracts have been signed.
	2018	Complete bench-scale prototypes of economically viable technologies that enable smart charging.	Due to a delay in the launch of the solicitation, this milestone is expected to be achieved in mid to late 2019.
	2018	Contract with projects awarded in second competitive solicitation for the development and demonstration of EV-enabling technologies.	NYSERDA made awards for Round 2 of PON 3578 in March 2019. Contracts are being negotiated with initial award recipients from PON 3578, Round 2. No contracts have been signed yet.
	2018	Contract with projects awarded in third competitive solicitation for the development and demonstration of EV-enabling technologies.	The third solicitation is expected to launch later in 2019.
	2018	Fast-charging station network expanded to 30 locations statewide along major interstate corridors.	In June 2018, the New York Power Authority announced a major DC Fast Charging investment of \$40 million to install 200 DC Fast Charging stations and NYSERDA will monitor their implementation.
	2019	Issue third competitive solicitation for the development and demonstration of EV-enabling technologies.	The third solicitation is expected to launch later in 2019.

Near-Term Milestones for Public Transportation and Electrified Rail

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

Near-Term Milestones for Energy Related Environmental Research

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Solicitations issued for research projects consistent with the research plan.	PON 4082, Environmental and Fisheries Research for Offshore Wind Energy Development, was released in March 2019. Two bid requests were released in early Q2 2019 focused on carbon capture, sequestration, and use; and planning for climate resilience in NYSERDA programs. A climate solicitation is being developed based on updates to the Research Plan, which was completed in early 2019.
	2019	Projects contracted from solicitations.	Awards resulting from PON 4082 are anticipated to be contracted in Q2 2019.
	2019	Outreach, technology transfer, and briefings to share research findings.	Outreach supported with CEF and other funding sources is ongoing. Dissemination of research findings is ongoing via workshops, briefings, and similar.

Near-Term Milestones for Energy Storage Technology and Product Development

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract projects from second competitive solicitation.	Five of the eight awards have been contracted.
✓	2019	Contract projects from third competitive solicitation.	Two projects have been contracted.
	2019	Review portfolio of activities, solicit market input, and reassess technology challenge areas and targets.	These are ongoing activities which are performed over the course of the year.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Intellectual property management plan approved by Board of Directors and DOE.	Intellectual property management plan has been approved by the Board of Directors and Department of Energy (DOE).
	2019	Consortium communication and outreach strategy approved by consortium CEO.	Draft consortium communication and outreach strategy is in review.
✓	2019	Consortium website launched.	Website launched at nationaloffshorewind.org
✓	2019	Project financial, intellectual property, and contractual templates, terms and conditions, guidelines and policies approved by the Consortium Board of Directors.	Project financial, intellectual property, and contractual templates, terms and conditions, guidelines and policies are agreed and released with first solicitation.
✓	2019	Collaboration agreement and standard project terms and conditions with each national research and test facility partner approved by consortium legal staff and CEO.	Agreement and standard project terms and conditions were approved by consortium leadership and NYSERDA and were included in release of the first consortium competitive solicitation.
	2019	U.S. manufacturing and data management plans approved by Board of Directors and DOE.	Draft U.S. Manufacturing and Data Management plans are in review.
	2019	Investor and public sponsor outreach strategies approved by Board of Directors.	Public sponsor strategy approved by the Board of Directors and DOE. Investor outreach strategy is in review.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2019	Competitive solicitation procedures and processes, templates, scoring guidelines and mechanisms approved by the Consortium Board of Directors.	Competitive solicitation procedures and processes, templates, scoring guidelines and mechanisms are agreed and included in initial solicitation.
	2019	Issue competitive solicitations for initial R&D priorities.	Competitive Solicitation for Pillar 1 has been released
	2019	Contract projects selected through initial solicitations.	Project selection is in progress for initial solicitations.
	2019	Update R&D priorities.	R&D Priority update scheduled for Q4 2019.
	2019	Revise competitive solicitations to align with updated R&D priorities.	Competitive solicitation update scheduled for Q4 2019.

Endnotes

- ¹ Case 14-M-0094 – Proceeding on Motion of the Commission to Consider a Clean Energy Fund, Ordering Authorizing the Clean Energy Fund Framework. Issued and effective January 21, 2016.
- ² To facilitate transparent and orderly tracking of these ongoing filings, a designated matter number related to Case 14-M-0094 was created by Notice issued by the New York State Public Service Commission on May 6, 2016 for Investment Plan Chapters and related filings. As of May 6, 2016, all filings related to the Clean Energy Fund Investment Plan are filed in Matter Number 16-00681, In the Matter of the Clean Energy Fund Investment Plan.
- ³ <http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?Mattercaseno=18-M-0084>
- ⁴ NYSERDA and DPS. 2018. "New Efficiency: New York". NYSERDA. <https://www.nysERDA.ny.gov/About/Publications/New-Efficiency>.
- ⁵ Beginning with Q4 2016, NYSERDA updated emission factors for natural gas, #2 oil, #6 oil, kerosene, propane, wood, and steam to be consistent with emission factors used in the updated NYS Greenhouse Gas Inventory (nysERDA.ny.gov/About/Publications/EA-Reports-and-Studies/Energy-Statistics). These factors are derived from EPA's February 2016 State Inventory Tool release (<https://www.epa.gov/statelocalclimate/state-inventory-and-projection-tool>). Steam emission factors have been updated to be consistent with New York City's updated Greenhouse Gas Inventory. (http://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/NYC_GHG_Inventory_2014.pdf).
- ⁶ The 88 million MWh renewable energy goal is not shown in Figure 2 as it is mainly supported by NY-Sun.
- ⁷ Per the Clean Energy Advisory Council (CEAC) Metrics, Tracking and Performance Assessment (MTPA) Working Group, NYSERDA has adopted a marginal electricity grid emission factor of 1,103 pounds CO₂e/MWh for projects completed after 2015 (<http://documents.dps.ny.gov/public/MatterManagement/MatterFilingItem.aspx?FilingSeq=190731&MatterSeq=50399>). Projects completed prior to 2016 will maintain the 1,160 pounds CO₂e/MWh previously used, based on analysis of grid emissions at that time.
- ⁸ Customer Bill Savings are calculated as direct energy bill savings realized by customers participating in NYSERDA's programs.
- ⁹ If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development and Innovation and Research Portfolio Level Budgets and Spending table, an additional \$34.6 million or 37% of the total approved budget to date, would be included with total NYSERDA commitments.
- ¹⁰ If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Resource Acquisition Transition Initiative Level Budget and Spending table, an additional \$4,012,109 or 80% of the total approved budget to date, would be included with total NYSERDA commitments.
- 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 \$12,734,584 or 30% 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 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 \$17,858,586 or 35 % of the total approved budget to date, would be included with total NYSERDA commitments.
- ¹⁴ The Market Characterization and Design Chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- ¹⁵ The launch dates for the ASHP and ARTU are not in alignment with what was presented in the investment plan. NYSERDA will correct these launch dates in a future filing based on guidance from the Department of Public Service.

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

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