

Clean Energy Fund Quarterly Performance Report through December 31, 2018

Final Report | February 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.

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Final Report

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February 2019

About This Report

The Clean Energy Fund (CEF) Order was issued on January 21, 2016.¹ The CEF is comprised of four distinct portfolios (CEF Portfolio) including:

- 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 of 2018, 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, along with metrics data for utility programs, in early 2019. 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 of 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.

This report represents quarterly and cumulative activity through December 31, 2018 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

This report reflects planned and achieved direct benefits from participation in NYSERDA's programs through December 31, 2018. Many CEF initiatives also anticipate accruing indirect, longer-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 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. 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 GHG emissions by 2030 ("40 by 30") from 1990 levels.³

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:

- 6,000 MW of solar by 2025
- 70% renewable electricity by 2030
- 9,000 MW of offshore wind by 2035
- Carbon-free electricity by 2040

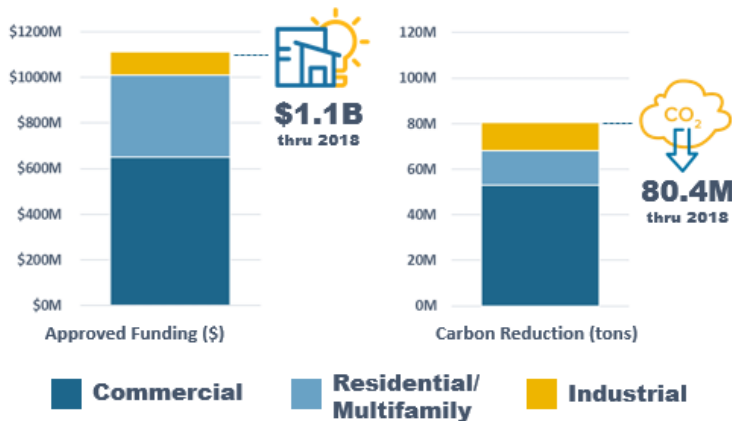
With these goals, New York is undertaking one of the most aggressive clean energy agendas in the nation. Through the CEF and its other portfolios, NYSERDA works to foster the transformation of markets, pushing them to accurately value clean energy, energy efficiency, and resilience—while encouraging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

The CEF portfolios emphasize investments in energy efficiency, NYSERDA is 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 December 31, 2018 comprise more than \$1.1 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 CO₂e savings over the life of the installed measures.

Energy Efficiency

A snapshot of the progressively-built CEF portfolio's planned contributions towards EE as of Dec. 2018.



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

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

The CEF offers solutions that will:

- 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 by \$1.5 billion by 2025

Figure 1 presents a more comprehensive picture of progress, with the 10-year budget and 10-year minimum goals reflecting all four CEF portfolios (MD, I&R, NY-Sun, and NY Green Bank). Progress shown against each key performance indicator (KPI) represents results through December 31, 2018.

Figure 1. CEF Portfolio Expected Investment and Benefits
 Toward 10-year minimum Goals as of December 31, 2018 (millions)⁴

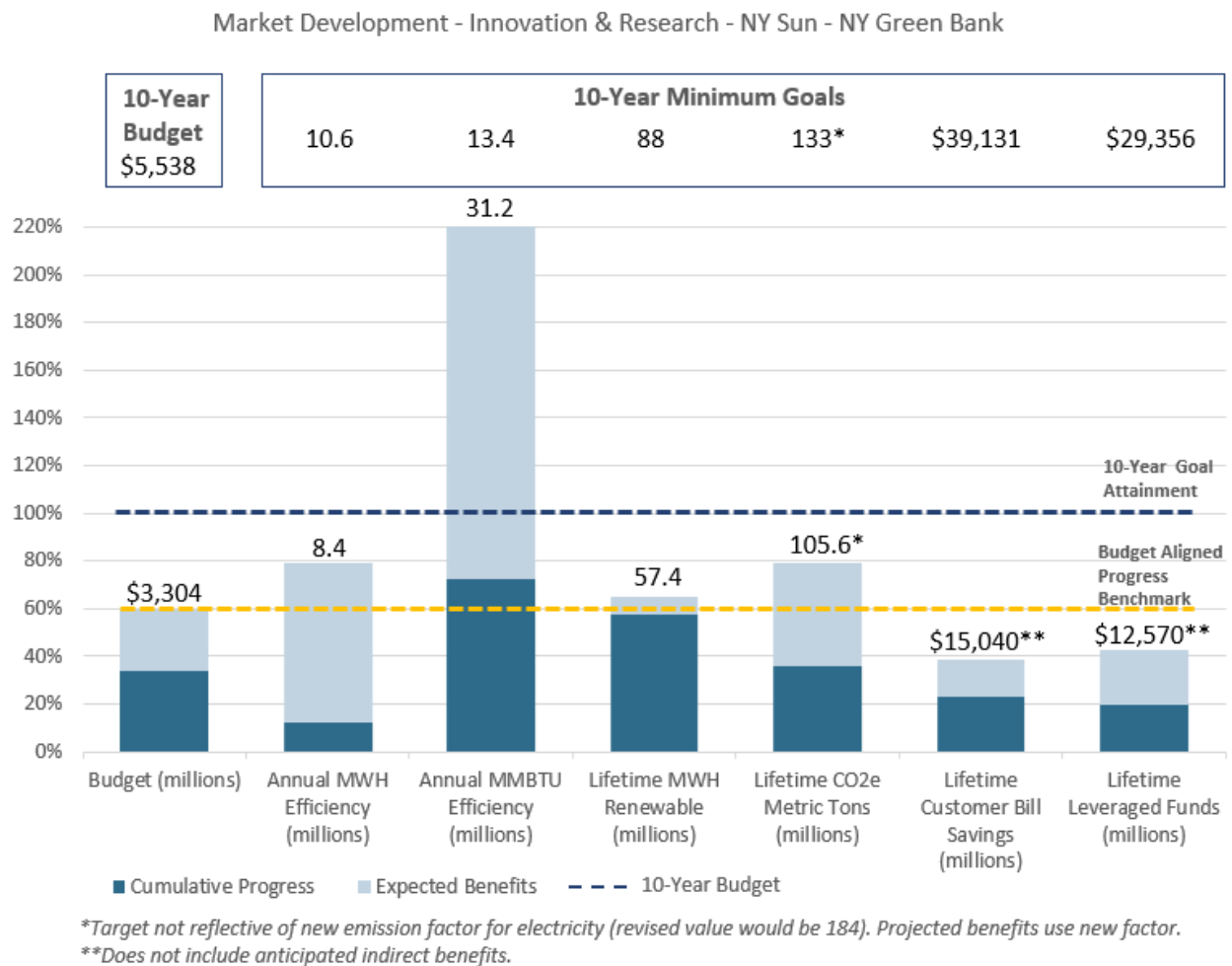


Figure 1 illustrates that deployment of funds is well-aligned with energy and carbon KPI progress at this time.⁵ Here, “Cumulative Progress” (committed budgets and benefits) is combined with “Expected Benefits” (approved but not yet committed budgets and benefits) to demonstrate total progress towards NYSERDA’s targets.

Progress toward “no backsliding from EEPS” energy efficiency MWh and MMBtu goals targets remains on track, with MMBtu expected benefits significantly greater than the minimum projected benefits already. Carbon dioxide equivalent (CO₂e) emission reduction progress is on track to meet the overall goal for the CEF. The CEF’s fuel-neutral approach is an important driver of success on the CO₂e metric.⁶

Performance of the customer (participant) bill savings⁷ and lifetime leveraged funds metrics appears low at this time because it is 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 indirect 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 December 2018, 64 MD and I&R initiatives were developed by NYSERDA and filed with the Public Service Commission, of which 59 initiatives are considered “active,” engaging the marketplace. Following the release of the CEF Order, NYSERDA introduced 39 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.

Performance to Plan

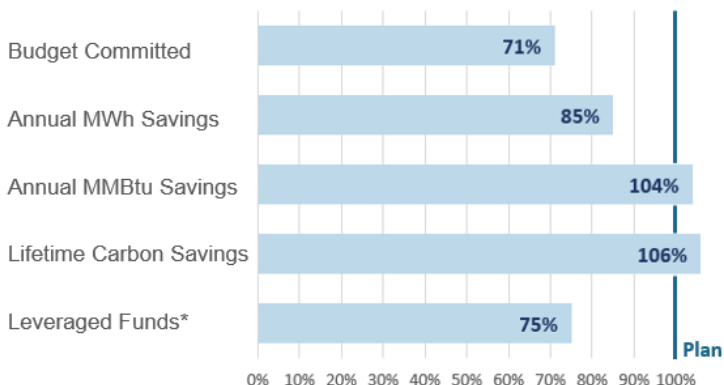
NYSERDA closely monitors MD and I&R portfolio performance, specifically of each initiative against its investment plan forecast of benefits over time. NYSERDA’s planned benefits through Q4 2018 are defined as 100% of the 2016, 2017, and 2018 annual planned benefits. However, it is important to note that 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.

Below is a high-level view of NYSERDA’s MD and I&R portfolio performance to plan. Broadly speaking, committed benefits are exceeding the committed budget at this time, yielding a higher return on investment than anticipated. Still, with the exception of CO₂e and MMBtu savings, the pace of commitment and attainment of benefits is below 90% of plan at this point in time, so NYSERDA

continues to place great emphasis on increasing the pace for project commitment to ensure progress toward achieving targets remains on track.

MD and I&R Portfolio Performance-To-Plan

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

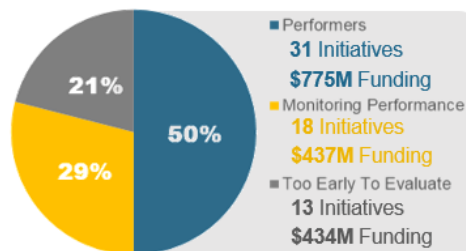


* "Leveraged Funds" has replaced the prior term "Private Investment" in order to more accurately reflect the original intent of this metric, which is inclusive of non-NYSERDA funding from a variety of sources.

Portfolio Initiative Performance

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

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



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

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

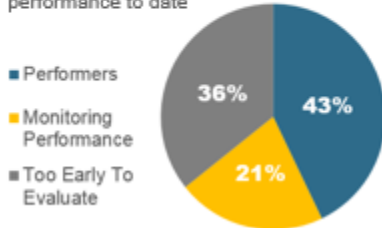
Monitoring Performance, and Too Early to Evaluate is aligned with design and management expectations.

Spotlight On "Top Carbon Impact" Initiatives

In NYSERDA's MD and I&R portfolio, 15 key initiatives currently account for nearly 85% of the expected lifetime CO₂e benefits and 35% of the approved budget. Notably, these top contributors also include a very strong focus on energy efficiency.

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 inside of the three status categories previously introduced: Performers (Table 1), Monitoring Performance (Table 2), and Too Early to Evaluate (Table 3). Additional information on performance of all initiatives in the portfolio is included within each “performance profile” shown in sections 2, 3, and 4.

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

Initiative	Approved Portfolio	Initiative Performance-to-Date		Initiative Performance Narrative
	% of Total Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Industrial Transition	10%	124%	151%	This initiative continues to show excellent return on investment. Market uptake and emissions benefits are exceeding expectations currently. A small number of very large projects contribute significantly to the benefits.
Industry Partnerships (Workforce Development)	9%	135%	120%	This initiative is currently exceeding benefits expectations, due in large part to increased participation by portfolio companies with multiple buildings.
Clean Energy Communities	6%	202%	106%	This initiative is exceeding benefits expectations in nearly every area. Participation has been very strong with 233 communities completing at least four High-Impact Actions to become Clean Energy Communities. In total, 516 communities completed 1,410 High-Impact Actions.
Continuous Energy Improvement (Industry)	5%	42%	87%	NYSERDA continues industrial stakeholder engagement to build pipeline participation. Benefits are strong on Strategic Energy Management (SEM) and On-Site Energy Manager (OSEM), with case studies under development to illustrate successful energy initiatives. Energy Management Information Systems participation is lagging and NYSERDA is engaging the market to address barriers.
Electric Vehicles - Rebate	3%	52%	50%	<p>Broadly speaking, market growth of EV sales is strong and aligned with NYSERDA’s original market forecast, but there is less direct participation than expected in the NYSERDA rebate program, with only about 60% of eligible EV sales utilizing the rebate since launch.</p> <ul style="list-style-type: none"> • More than 15,000 EVs were sold in NY in 2018, a 50% increase over 2017. • Between March 2017, when the Drive Clean Rebate started, and November 2018, more than 22,000 EVs have been sold in NY, second among states only to California. <p>Given the market is reacting positively with less need for rebates, NYSERDA’s EV Rebate investment plan will be recalibrated to achieve similar impact by supporting EV sales over a longer period of time. ROI remains strong for this NYSERDA investment.</p>
Combined Heat & Power Transition	2%	110%	91%	Although the program is performing well compared to its plans for participants and energy/economic benefits metrics, review of applications has been slower than expected. Performance against planned metrics is expected to be more favorable as the pipeline of applications is acted on. A strong spike in market demand was experienced in Q4.

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

Initiative	Approved Portfolio	Initiative Performance-to-Date		Initiative Performance Narrative
	% of Total Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Energy Management	7%	105%	68%	<p>Market interest and uptake of Real-time Energy Management (RTEM) is very promising. Early returns from the RTEM program indicate that customers are interested in investing in energy efficiency improvements through the combination of smart building technology, data analytics, and ongoing consulting services. RTEM as a cost-effective approach for driving energy efficiency adoption beyond lighting.</p> <p>Low achievement on planned energy and environmental benefits is partially due to the method for estimating these benefits for committed projects early in the project lifecycle. Analysis of data for more mature projects suggests overall program impact will be met and ROI will be favorable. Investment plan is being revised to incorporate learning to date and expand the impact of this initiative.</p>
Commercial Transition	2%	292%	38%	Program cancelled - will be "closed" and removed from plans during Q1 2019.
REV Campus Challenge	2%	101%	38%	REV Campus Challenge is seeing good market uptake, having achieved its membership (participation) goal to date. Clean energy benefits from all member activities will be analyzed in 2019 and is anticipated to boost progress against energy and environmental metrics. Currently, data is insufficient to claim these benefits.
Technical Services	2%	7%	83%	The initiative has made good progress against its current implementation milestones. Performance of the On-site Energy Manager Program exceeded expectations after one year of operation. The second component of Technical Services, the Energy Study Aggregation Program, launched at the end of Q2 2018 and is currently lagging. NYSERDA is evaluating opportunities to refine the offering to increase uptake with changes expected the first half of 2019.

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

Initiative	Approved Portfolio	Initiative Performance-to-Date		Initiative Performance Narrative
	% of Total Planned CO ₂ e Impact	% of Planned Participants (Market Uptake)	% of Planned Lifetime CO ₂ e Savings	
Underutilized Product Support	15%	45%	96%	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. Research on product and appliance standards continued in Q4 2018. Standards is the most recent addition with significant expectations for market impact. Research on product and appliance standards continued in Q4 2018.
RetrofitNY	8%	0%	0%	Six design/construction teams designed retrofit solutions on six affordable housing buildings. Final deliverables were received by NYSERDA in December 2018 and are under review. Some or all the six buildings for which solutions were designed will be the first RetrofitNY pilot buildings and will commence construction in 2019.
New Construction - Market Rate	7%	13%	20%	NYSERDA has purposefully slowed the pace of rollout, vs timing outlined in the investment plan, in order to ensure alignment with other key activities. Rollout is expected to commence along with commensurate progress reporting in early 2019.
Code to Zero	5%	0%	0%	This initiative has not yet utilized CEF funding to the degree expected due to the availability of other funding sources. However, significant activity and impact is occurring though: <ul style="list-style-type: none"> Delivered the draft NYStretch Energy Code to New York City supporting their Energy Code rulemaking schedule. Training for code officials was delivered during 2018. Support for NYS Dept of State's energy code update and rulemaking commenced in Q4 2018. Road-mapping effort to codify stretch-to zero initiated in Q3 2018 and since has expanded in scope.
K-12	2%	100%	100%	Although still newly launched in mid-2018, this initiative is showing excellent progress against its current implementation milestones. Development of the first Gap Assistance Program has started and the Benchmarking Program is expected to launch Q1 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 sections 2, 3, and 4 of the report. A detailed summary of benefits progress through December 31, 2018, both annual (Table 5) and lifetime (Table 6) concludes this overview.

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

See Endnotes section for more information⁸

Initiative	Total Budget ^a	Budget Approved as of December 31, 2018 ^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	\$2,346,051,964	\$1,434,214,809	61%	\$215,567,053	\$294,190,990	\$509,758,044	36%	\$924,456,765
Innovation & Research								
Program Funds								
NYS Cost Recovery Fee	\$619,090,948	\$359,781,262	58%	\$27,713,811	\$56,152,317	\$83,866,128	23%	\$275,915,134
Administration	\$268,934,758	\$160,802,164	60%	\$67,825,413	\$52,842	\$67,878,255	42%	\$92,923,909
Evaluation	\$127,606,798	\$55,228,825	43%	\$2,556,963	\$4,468,860	\$7,025,823	13%	\$48,203,002
Total	\$3,361,684,468	\$2,010,027,060	60%	\$313,663,240	\$354,865,009	\$668,528,250	33%	\$1,341,498,810

^a Reflects reduction of CEF Ordered total funding authorization by about \$68.3 million (2%) for reduction in RGGI funding proposed for April 1, 2018 to June 30, 2021 proposed in RGGI Operating Plan approved January 2018.

^b Funds approved by DPS as of December 31, 2018.

^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.

Table 5. Market Development and Innovation and Research Portfolio
Committed Benefits Progress to Date—Annual

Initiative	Completed Projects through September 30, 2018 with Adjustments	Completed Projects through 10/1/18 - 12/31/18	Total Completed Projects through December 31, 2018	Current Pipeline Through December 31, 2018 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Planned Benefits Through Q4 2018	% of Cumulative Annual Planned Benefits Through Q4 2018	Total Cumulative Annual Planned Benefits through 2025	% of Total Cumulative Annual Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	184,858	31,537	216,395	1,043,385	1,259,780	1,490,775	85%	3,380,834	37%
Energy Efficiency (MMBtu)	3,525,821	673,731	4,199,552	5,474,559	9,674,111	9,334,846	104%	21,634,021	45%
Energy Efficiency (MW)	2	-	2	84	86	*	-	*	-
Renewable Energy (MWh)	38,051	12,316	50,367	17,811	68,178	*	-	*	-
Renewable Energy (MW)	31	11	42	5	47	*	-	*	-
CO2e Reductions (metric tons)	619,798	55,638	675,436	761,255	1,436,691	*	-	*	-
Customer Bill Savings (\$ million)	\$60.46	\$11.25	\$71.71	\$154.53	\$226.24	*	-	*	-
Leveraged Funds (\$ million)	\$604.47	\$93.84	\$698.31	\$1,121.85	\$1,820.16	*	-	*	-
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)	\$238.70	-	\$238.70	\$217.00	\$455.70	*	-	*	-
Total Energy Efficiency (MWh)	184,858	31,537	216,395	1,043,385	1,259,780				
Total Energy Efficiency (MMBtu)	3,525,821	673,731	4,199,552	5,474,559	9,674,111				
Total Energy Efficiency (MW)	2.0	0.0	2	84	86				
Total Renewable Energy (MWh)	38,051	12,316	50,367	17,811	68,178				
Total Renewable Energy (MW)	31	11	42	5	47				
Total CO2e Reductions (metric tons)	619,798	55,638	675,436	761,255	1,436,691				
Total Customer Bill Savings (\$ million)	\$60.46	\$11.25	\$71.71	\$154.53	\$226.24				
Total Leveraged Funds (\$ million)	\$843.17	\$93.84	\$937.01	\$1,338.85	\$2,275.86				

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

Table 6. Market Development and Innovation and Research Portfolio
Committed Benefits Progress to Date—Lifetime

Initiative	Completed Projects through September 30, 2018 with Adjustments	Completed Projects through 10/1/18 - 12/31/18	Total Completed Projects through December 31, 2018	Current Pipeline Through December 31, 2018 (Committed but not complete)	Grand Total Completed Projects + Pipeline	Cumulative Current Annual Planned Benefits Through Q4 2018	% of Cumulative Annual Planned Benefits Through Q4 2018	Total Cumulative Lifetime Planned Benefits through 2025	% of Total Cumulative Lifetime Planned Benefits through 2025
Market Development									
Energy Efficiency (MWh)	2,851,786	495,966	3,347,752	15,515,879	18,863,631	*	-	*	-
Energy Efficiency (MMBtu)	56,003,869	10,581,351	66,585,220	83,018,412	149,603,632	*	-	*	-
Renewable Energy (MWh)	575,168	184,744	759,912	282,735	1,042,647	2,069,350	50%	3,829,200	27%
CO2e Reductions (metric tons)	9,534,924	870,825	10,405,749	10,945,156	21,350,905	20,096,448	106%	45,603,230	47%
Customer Bill Savings (\$ million)	\$938.54	\$172.60	\$1,111.14	\$2,272.64	\$3,383.78	\$3,940.75	86%	\$9,294.50	36%
Leveraged Funds (\$ million)	\$604.47	\$93.84	\$698.31	\$1,121.85	\$1,820.16	\$2,381.71	76%	\$6,435.89	28%
Innovation and Research									
Energy Efficiency (MWh)	-	-	-	-	-	*	-	*	-
Energy Efficiency (MMBtu)	-	-	-	-	-	*	-	*	-
Renewable Energy (MWh)	-	-	-	-	-	*	-	*	-
CO2e Reductions (metric tons)	-	-	-	-	-	*	-	*	-
Customer Bill Savings (\$ million)	-	-	-	-	-	*	-	*	-
Leveraged Funds (\$ million)	\$238.70	-	\$238.70	\$217.00	\$455.70	\$637.73	71%	\$1,444.03	32%
Total Energy Efficiency (MWh)	2,851,786	495,966	3,347,752	15,515,879	18,863,631	-	-	-	-
Total Energy Efficiency (MMBtu)	56,003,869	10,581,351	66,585,220	83,018,412	149,603,632	-	-	-	-
Total Renewable Energy (MWh)	575,168	184,744	759,912	282,735	1,042,647	-	-	-	-
Total CO2e Reductions (metric tons)	9,534,924	870,825	10,405,749	10,945,156	21,350,905	-	-	-	-
Total Customer Bill Savings (\$ million)	\$938.54	\$172.60	\$1,111.14	\$2,272.64	\$3,383.78	-	-	-	-
Total Leveraged Funds (\$ million)	\$843.17	\$93.84	\$937.01	\$1,338.85	\$2,275.86	-	-	-	-

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

2 Resource Acquisition Transition Initiative Specific Progress

Table 7. Resource Acquisition Transition Initiative Level Budgets and Spending

See Endnotes section for more information⁹

Initiative	Budget Approved as of December 31, 2018 ^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	\$26,392,500	\$3,844,043	\$6,605,823	\$10,449,866	40%	\$15,942,634
Industrial Transition	\$69,562,932	\$11,718,741	\$40,470,081	\$52,188,822	75%	\$17,374,110
Agriculture Transition	\$3,600,000	\$3,389,881	\$174,867	\$3,564,748	99%	\$35,252.00
Multifamily Market Rate Transition	\$156,628	\$156,214	\$359	\$156,573	100%	\$55
Single Family Market Rate Transition	\$24,335,189	\$15,956,676	\$2,518,822	\$18,475,498	76%	\$5,859,691
Commercial New Construction Transition	\$30,683,999	\$2,536,451	\$27,163,570	\$29,700,022	97%	\$983,977
Low Rise New Construction Transition - LMI	\$8,487,000	\$1,474,654	\$5,537,889	\$7,012,543	83%	\$1,474,457
Low Rise New Construction Transition - Market Rate	\$4,837,000	\$2,077,547	\$2,345,975	\$4,423,522	91%	\$413,478
Multifamily New Construction Transition - LMI	\$10,879,000	\$1,286,511	\$9,419,632	\$10,706,143	98%	\$172,857
Multifamily New Construction Transition - Market Rate	\$2,734,000	\$523,925	\$1,425,587	\$1,949,512	71%	\$784,488
Anaerobic Digesters Transition	\$20,150,000	\$451,915	\$3,721,175	\$4,173,090	21%	\$15,976,910
Small Wind Transition	\$6,090,000	\$1,907,834	\$1,181,541	\$3,089,375	51%	\$3,000,625
Solar Thermal Transition	\$399,000	\$226,499	\$72,306	\$298,805	75%	\$100,195
Combined Heat & Power Transition	\$71,550,000	\$8,914,324	\$30,868,871	\$39,783,195	56%	\$31,766,805
TOTAL	\$279,857,248	\$54,465,215	\$131,506,498	\$185,971,714	66%	\$93,885,534

^a Funds approved by DPS as of December 31, 2018.

^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.

Commercial Resource Acquisition Transition and FlexTech Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
CO2e	2%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	53%
EE Annual MWh Savings	43%
EE Annual MMBtu Savings	37%
Lifetime CO2e Reduction	38%
Leveraged Funds	43%
Lifetime Customer Bill Savings	37%
Participants	292%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:	
	February 29, 2016	March 1, 2016	July 17, 2017	

Explanation of Progress
 The Commercial Implementation Program closed April 2017 and NYSERDA will be revising the investment plan to formally close out this initiative in Q1 2019. There were only eight approved projects, and the planned benefits for this program component will not be met due to the low participation. The FlexTech component (commercial) has experienced an uptick in interest leading to more projects and savings. Small commercial and not-for-profit energy audits also contribute to the increase in projects and savings.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Industrial Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	4%
CO2e	10%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	101%
EE Annual MWh Savings	93%
EE Annual MMBtu Savings	120%
Lifetime CO2e Reduction	151%
Leveraged Funds	99%
Lifetime Customer Bill Savings	77%
Participants	123%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:	
	February 29, 2016	March 1, 2017	July 17, 2017	

Explanation of Progress
 Nearly all metrics are exceeding expectations at this time, with continued excellent ROI. A small number of very large projects are contributing significantly to benefits at this time.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Agriculture Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.2%
CO2e	0.2%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	99%
EE Annual MWh Savings	92%
EE Annual MMBtu Savings	396%
Renewable Energy Annual MWh	0%
Lifetime CO2e Reduction	111%
Leveraged Funds	116%
Lifetime Customer Bill Savings	115%
Participants	104%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2017	July 17, 2017

Explanation of Progress
 The initiative is exceeding nearly all planned benefits at this time and is on a strong path to meet or exceed all of its total planned goals.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Multifamily Market-Rate Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.1%
CO2e	0.1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	100%
EE Annual MWh Savings	0%
EE Annual MMBtu Savings	8%
Lifetime CO2e Reduction	7%
Leveraged Funds	17%
Lifetime Customer Bill Savings	4%
Participants	78%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	May 19, 2016	July 17, 2017

Explanation of Progress
 The initiative is no longer accepting applications as of July 17, 2017 and will be formally closed out during the 2019 planning cycle. The program received less applications but more units than anticipated, which explains why progress is greatly exceeding the planned value for participants. However, the energy conservation measures implemented were low-cost and yielded less savings than initially projected; therefore, relative progress against other benefit metrics is lower than planned.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Single Family Market-Rate Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	84%
EE Annual MWh Savings	106%
EE Annual MMBtu Savings	89%
Lifetime CO2e Reduction	93%
Leveraged Funds	101%
Lifetime Customer Bill Savings	95%
Participants	100%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2016	July 17, 2017

Explanation of Progress

The program is on track to meet its CEF goals.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Commercial New Construction Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
CO2e	2%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	97%
EE Annual MWh Savings	101%
EE Annual MMBtu Savings	354%
Lifetime CO2e Reduction	136%
Leveraged Funds	168%
Lifetime Customer Bill Savings	127%
Participants	97%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2016	July 17, 2017

Explanation of Progress

Participants and savings are trending in line with, or ahead of projections.

Project capital incentives are trending lower than projected. Increasingly stringent energy codes challenge applicants to achieve significant "above code" performance, which impacts the incentives.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Low-Rise New Construction Market Rate Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.3%
CO2e	0.2%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	91%
EE Annual MWh Savings	89%
EE Annual MMBtu Savings	122%
Lifetime CO2e Reduction	107%
Leveraged Funds	57%
Lifetime Customer Bill Savings	87%
Participants	68%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2016	July 17, 2017

Explanation of Progress

Market uptake has been strong and the planned benefits will closely align with the committed values at the conclusion of the program. ROI has also been good, with market rate participant metrics reflecting significant participation of single-family homes, which typically have a higher potential savings per dwelling unit (or participant) in comparison to multifamily dwellings and multiple-unit developments, which are typically smaller square footage.

No additional funding commitments are anticipated for this transitional initiative, as new project applicants will be received through the Market Development New Construction initiative.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Low-Rise New Construction Low- to Moderate Income Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.5%
CO2e	0.2%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	83%
EE Annual MWh Savings	79%
EE Annual MMBtu Savings	108%
Lifetime CO2e Reduction	93%
Leveraged Funds	70%
Lifetime Customer Bill Savings	78%
Participants	85%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2016	July 17, 2017

Explanation of Progress

The scale of projects related to multifamily dwellings and multiple-unit developments, which are typically smaller square footage, has impacted the program's progress against planned benefits.

No additional funding commitments are anticipated for this transitional initiative, as all new project applicants are expected to be CEF-funded as New Construction Initiatives rather than as transition programs.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Multifamily New Construction Market Rate Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.2%
CO2e	0.1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	71%
EE Annual MWh Savings	33%
EE Annual MMBtu Savings	34%
Lifetime CO2e Reduction	34%
Leveraged Funds	28%
Lifetime Customer Bill Savings	38%
Participants	40%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	August 8, 2016	July 17, 2017

Explanation of Progress

The market-rate component will not deliver as planned. NYSERDA will release modifications to the multifamily initiative in Q1 of 2019, delivering more effective strategies based on the New Construction Chapter of the CEF Investment Plan which are intended to strengthen participation and outcomes.

No additional funding commitments are anticipated for this initiative, as new applicants are expected to be CEF-funded as New Construction initiatives, rather than as transition programs.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Multifamily New Construction Low- to Moderate-Income Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.6%
CO2e	0.3%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	98%
EE Annual MWh Savings	91%
EE Annual MMBtu Savings	86%
Lifetime CO2e Reduction	89%
Leveraged Funds	74%
Lifetime Customer Bill Savings	103%
Participants	93%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	August 8, 2016	July 17, 2017

Explanation of Progress

The low- to moderate-income component of this initiative will align closely with the planned values at the conclusion of this program.

No additional funding commitments are anticipated for this initiative, as new applicants are expected to be CEF-funded as New Construction initiatives, rather than as transition programs.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Anaerobic Digester Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	0.4%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	21%
EE Annual MWh Savings	n/a
EE Annual MMBtu Savings	n/a
Renewable Energy Annual MWh	9%
Lifetime CO2e Reduction	13%
Leveraged Funds	8%
Lifetime Customer Bill Savings	17%
Participants	6%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	July 8, 2017	September 24, 2018

Explanation of Progress

A delay in launching in 2017 and 2018 activities caused the lag in performance illustrated in KPIs. Market launch occurred December 4, 2018, with proposals due in March of 2019. Project selection (commitments) will occur around mid-2019. The program plan will be updated in 2019 to better reflect anticipate impact.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Small Wind Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.4%
CO2e	0.1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	51%
EE Annual MWh Savings	n/a
EE Annual MMBtu Savings	n/a
Renewable Energy Annual MWh	31%
Lifetime CO2e Reduction	36%
Leveraged Funds	46%
Lifetime Customer Bill Savings	29%
Participants	37%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2016	

Explanation of Progress

The program has not achieved planned benefits due to smaller-sized projects and fewer developers than anticipated. The program closed 12/31/2018 per plan without exhausting the budget; NYSERDA intends to re-open in late Q1 of 2019 for duration of 2019 or until budget becomes exhausted, whichever comes first.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Solar Thermal Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.02%
CO2e	0.01%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	75%
EE Annual MWh Savings	n/a
EE Annual MMBtu Savings	n/a
Renewable Energy Annual MWh	100%
Lifetime CO2e Reduction	100%
Leveraged Funds	100%
Lifetime Customer Bill Savings	96%
Participants	100%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2016	July 17, 2017

Explanation of Progress
 The program is no longer accepting applications but has projects in the pipeline and is on pace to achieve expected planned benefits.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Combined Heat and Power Resource Acquisition Transition Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	4%
CO2e	2%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	60%
EE Annual MWh Savings	89%
EE Annual MMBtu Savings	n/a
Lifetime CO2e Reduction	91%
Leveraged Funds	100%
Lifetime Customer Bill Savings	95%
Participants	94%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 29, 2016	March 1, 2016	

Explanation of Progress
 The initiative is performing strongly. Market uptake and benefits metrics are aligned with expectations at this time.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

3 Market Development Initiative Specific Results

Table 8. Market Development Initiative Budgets and Spending

See Endnotes for more information^{10,11}

Initiative	Budget Approved as of December 31, 2018 ^a	Expended Funds ^b	Committed Funds ^c	Total Progress ^d	% of Approved Budget Committed ^e	Budget Approved Remaining Balance ^f
Market Characterization & Design Chapter	\$21,150,000	\$4,876,020	\$2,636,781	\$7,512,801	36%	\$13,637,199
Commercial Chapter						
Energy Management	\$59,805,000	\$3,161,235	\$12,533,460	\$15,694,695	26%	\$44,110,305
Real Estate Tenant	\$25,499,999	\$2,007,759	\$3,228,324	\$5,236,083	21%	\$20,263,916
REV Campus Challenge	\$21,650,002	\$1,098,364	\$5,466,824	\$6,565,187	30%	\$15,084,815
K-12	\$21,600,000	\$154,783	\$4,823,694	\$4,978,478	23%	\$16,621,522
Commercial Chapter Total	\$128,555,001	\$6,422,141	\$26,052,302	\$32,474,443	25%	\$96,080,558
Industrial Chapter						
Continuous Energy Improvement	\$17,539,000	\$3,057,906	\$3,260,649	\$6,318,555	36%	\$11,220,445
Industrial Chapter Total	\$17,539,000	\$3,057,906	\$3,260,649	\$6,318,555	36%	\$11,220,445
Communities Chapter						
Clean Energy Communities	\$14,218,527	\$2,140,506	\$8,890,262	\$11,030,768	78%	\$3,187,759
Community Energy Engagement	\$4,409,882	\$896,293	\$3,511,525	\$4,407,818	100%	\$2,064
Communities Chapter Total	\$18,628,409	\$3,036,799	\$12,401,787	\$15,438,586	83%	\$3,189,823
Large-Scale Renewables Chapter						
Offshore Wind Master Plan	\$5,000,000	\$4,743,884	\$237,537	\$4,981,421	100%	\$18,579
Offshore Wind Pre-Development Activities	\$10,000,000	\$3,374,205	\$5,944,470	\$9,318,675	93%	\$681,325
Large-Scale Renewables Chapter Total	\$15,000,000	\$8,118,089	\$6,182,007	\$14,300,096	95%	\$699,904
REV Technical Assistance Chapter						
REV Connect	\$2,500,000	\$2,219,600	\$246,830	\$2,466,430	99%	\$33,570
REV Technical Assistance Chapter Total	\$2,500,000	\$2,219,600	\$246,830	\$2,466,430	99%	\$33,570
Energy Storage Chapter						
Reducing Barriers to Distributed Deployment	\$24,450,000	\$2,927,234	\$7,966,370	\$10,893,604	45%	\$13,556,396
Solar Plus Energy Storage	\$40,000,000	-	-	-	0%	\$40,000,000
Energy Storage Chapter Total	\$64,450,000	\$2,927,234	\$7,966,370	\$10,893,604	17%	\$53,556,396
Clean Transportation Chapter						
Electric Vehicles	\$39,500,000	\$11,986,364	\$210,459	\$12,196,823	31%	\$27,303,177
Clean Transportation Chapter Total	\$39,500,000	\$11,986,364	\$210,459	\$12,196,823	31%	\$27,303,177
Agriculture Chapter						
2030 GLASE	\$5,000,000	\$570,892	\$4,429,108	\$5,000,000	100%	-
Advancing Agricultural Energy Technologies	\$3,760,000	\$1,929	-	\$1,929	0%	\$3,758,071
Agriculture Chapter Total	\$8,760,000	\$572,821	\$4,429,108	\$5,001,929	57%	\$3,758,071

Low- to Moderate-Income Chapter						
Healthy Homes Feasibility Study	\$215,000	\$138,307	\$73,840	\$212,147	99%	\$2,853
LMI Multifamily	\$50,189,418	\$2,429,666	\$12,472,086	\$14,901,752	30%	\$35,287,667
Single Family - Low Income	\$169,760,983	\$65,823,302	\$21,931,284	\$87,754,586	52%	\$82,006,397
Single Family - Moderate Income	\$59,500,878	\$25,783,039	\$3,393,373	\$29,176,412	49%	\$30,324,466
Low-Income Forum on Energy	\$1,300,000	\$174,746	\$119,244	\$293,989	23%	\$1,006,011
Retrofit NY	\$30,503,500	\$812,370	\$814,591	\$1,626,961	5%	\$28,876,539
REVitalize	\$725,000	\$148,252	\$162,528	\$310,780	43%	\$414,220
Low Income Community Solar	\$21,245,000	\$390,141	\$12,025,110	\$12,415,251	58%	\$8,829,749
Low- to Moderate-Income Chapter Total	\$333,439,779	\$95,699,822	\$50,992,056	\$146,691,878	44%	\$186,747,901
Workforce Development and Training Chapter						
Industry Partnerships	\$21,345,000	\$1,440,635	\$5,114,199	\$6,554,834	31%	\$14,790,166
Clean Technology and Energy Efficiency Talent Pipeline	\$47,000,000	\$1,089	\$706,700	\$707,789	2%	\$46,292,211
Workforce Development and Training Chapter Total	\$68,345,000	\$1,441,723	\$5,820,899	\$7,262,623	11%	\$61,082,377
Renewable Heating and Cooling						
Heat Pumps and Solar Thermal	\$33,211,843	\$7,396,225	\$10,856,674	\$18,252,899	55%	\$14,958,944
Renewable Heat NY	\$13,487,000	\$2,900,719	\$1,524,347	\$4,425,066	33%	\$9,061,934
Renewable Heating and Cooling Total	\$46,698,843	\$10,296,944	\$12,381,020	\$22,677,964	49%	\$24,020,878
Clean Energy Products Chapter						
Underutilized Product Support	\$46,465,000	\$5,315,307	\$1,070,470	\$6,385,777	14%	\$40,079,223
Clean Energy Products Chapter Total	\$46,465,000	\$5,315,307	\$1,070,470	\$6,385,777	14%	\$40,079,223
Multi-Sector Solutions Chapter						
Soft Cost Challenge	\$10,000,000	\$111,916	-	\$111,916	1%	\$9,888,084
Technical Services	\$21,898,040	\$169,848	\$3,664,609	\$3,834,457	18%	\$18,063,584
Clean Energy AMP Challenge	\$10,500,000	\$60,150	\$9,725,000	\$9,785,150	93%	\$714,850
Clean Energy Siting & Soft Cost Reduction	\$8,795,000	\$114,419	\$499,666	\$614,085	7%	\$8,180,915
Pay for Performance Pilot	\$55,756,709	\$51,661	\$2,312,441	\$2,364,103	4%	\$53,392,606
Multi-Sector Solutions Chapter Total	\$106,949,749	\$507,994	\$16,201,716	\$16,709,710	16%	\$90,240,039
Codes Chapter						
Code to Zero	\$21,000,000	\$374,390	\$372,240	\$746,630	4%	\$20,253,370
Codes Chapter Total	\$21,000,000	\$374,390	\$372,240	\$746,630	4%	\$20,253,370
On-Site Power Chapter						
Fuel Cells	\$15,000,000	\$35,733	\$1,000,000	\$1,035,733	7%	\$13,964,267
On-Site Power Chapter Total	\$15,000,000	\$35,733	\$1,000,000	\$1,035,733	7%	\$13,964,267
New Construction Chapter						
New Construction - LMI	\$24,784,800	\$138,763	\$490,210	\$628,973	3%	\$24,155,827
New Construction - Market Rate	\$124,264,632	\$337,076	\$7,432,950	\$7,770,026	6%	\$116,494,606
New Construction Chapter Total	\$149,049,432	\$475,839	\$7,923,160	\$8,398,999	6%	\$140,650,433
Residential Chapter						
Engaging New Markets	\$15,988,015	\$219,459	\$3,536,639	\$3,756,098	23%	\$12,231,917
Residential Chapter Total	\$15,988,015	\$219,459	\$3,536,639	\$3,756,098	23%	\$12,231,917
NYS Cost Recovery Fee	\$35,339,333	\$3,517,651	-	\$3,517,651	10%	\$31,821,682
Total Market Development	\$1,154,357,561	\$161,101,836	\$162,684,493	\$323,786,330	28%	\$830,571,230

Table notes are on the next page.

* Totals may not sum exactly due to rounding

- a Funds approved by DPS as of December 31, 2018.
- 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.

Commercial

Energy Management Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	4%
CO2e	7%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	87%
EE Annual MWh Savings	64%
EE Annual MMBtu Savings	134%
Lifetime CO2e Reduction	68%
Leveraged Funds	124%
Lifetime Customer Bill Savings	75%
Participants	105%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		May 23, 2016	June 20, 2016

Explanation of Progress
<p>Market interest and adoption of Real-time Energy Management (RTEM) is very promising. Early returns from the RTEM program indicate that customers are interested in investing in energy efficiency improvements through the combination of smart building technology, data analytics, and ongoing consulting services. NYSERDA sees RTEM as a cost-effective approach for driving energy efficiency adoption that goes beyond lighting.</p> <p>Projects are generally smaller and less costly than anticipated which is illustrated in savings KPIs, but analysis of project data suggests that overall program impact will be met with favorable ROI.</p>

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Real Estate Tenant Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	69%
EE Annual MWh Savings	72%
EE Annual MMBtu Savings	72%
Lifetime CO2e Reduction	72%
Leveraged Funds	198%
Lifetime Customer Bill Savings	76%
Participants	120%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		May 23, 2016	July 19, 2016

Explanation of Progress
<p>The Commercial Tenant program offer saw substantial increase in participation in 2018 compared to 2017 resulting in achieving 120% of the participation target through 2018. The types of projects being completed are smaller than anticipated resulting in reaching 72% of the anticipated savings target through 2018. A third program modification is planned for Q1 2019 aiming to attract deeper energy saving projects and increase the number of large portfolio projects.</p>

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Reforming the Energy Vision (REV) Campus Challenge Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	2%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	86%
EE Annual MWh Savings	39%
EE Annual MMBtu Savings	39%
Lifetime CO2e Reduction	38%
Leveraged Funds	47%
Lifetime Customer Bill Savings	43%
Participants	101%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	May 23, 2016	December 21, 2016	

Explanation of Progress
REV Campus Challenge has achieved its membership goal to date. Clean energy uptake from the members will be analyzed in 2019 and anticipated to contribute to savings targets. Approximately 39% of the REV Campus Challenge membership responded to a brief questionnaire assessing recent investments in energy efficiency and renewable energy. Of these respondents, approximately 80% had installed measures such as lighting, wind, HVAC and solar. These preliminary results will inform a more comprehensive impact evaluation in 2019 to ensure the most complete and accurate accounting of benefits from REV Campus Challenge.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

K-12 (Schools) Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	2%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	279%
EE Annual MWh Savings	100%
EE Annual MMBtu Savings	100%
Lifetime CO2e Reduction	100%
Leveraged Funds	101%
Lifetime Customer Bill Savings	110%
Participants	100%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	December 1, 2017	June 20, 2018	

Explanation of Progress
The initiative has made good progress against its current implementation milestones. The Benchmarking Program is expected to launch Q1 2019. Development of the first Gap Assistance Program has started.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Industrial

Continuous Energy Improvement Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	5%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	57%
EE Annual MWh Savings	103%
EE Annual MMBtu Savings	76%
Lifetime CO2e Reduction	87%
Leveraged Funds	73%
Lifetime Customer Bill Savings	82%
Participants	42%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		May 23, 2016	September 12, 2016

Explanation of Progress

NYSERDA continues industrial stakeholder engagement to build pipeline participation in Continuous Improvement Efforts. Case studies on initial projects in Strategic Energy Management and On Site Energy Manager illustrating successful energy initiatives being developed. Energy Management Information Systems participation lagging in applications and NYSERDA is reaching out to market actors to address barriers.

Sectors Served

- Residential Multifamily Commercial Industrial Transport.

Communities

Clean Energy Communities Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	6%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	138%
EE Annual MWh Savings	136%
EE Annual MMBtu Savings	121%
Renewable Energy Annual MWh	69%
Lifetime CO2e Reduction	106%
Leveraged Funds	134%
Lifetime Customer Bill Savings	106%
Participants	142%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	May 23, 2016	August 3, 2016	

Explanation of Progress
Outreach contractors are actively engaging communities. Many local governments are working to complete High-Impact Actions. As of 1/2/19, 233 communities completed at least four actions and are officially designated Clean Energy Communities. In total, 516 Communities completed 1410 High-Impact Actions, 1218 of which were completed after program launch.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Community Energy Engagement Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.3%
Leveraged Funds	0%
Top 15 Investment Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	102%
Leveraged Funds	74%
Participants	100%

Key Initiative Dates	Approval:	Launch:
	March 27, 2017	October 10, 2017

Explanation of Progress
All regions have active Community Energy Advisors providing outreach services. Regional specific pilot mini-bid delayed due to staff changes and is expected to be released in Q1 2019.

Large-Scale Renewables

Offshore Wind Master Plan Performance Profile

Initiative Size Relative to Portfolio		Key Initiative Dates		
NYSERDA MD and I&R Portfolio		Approval:	Launch:	Refiling Approved:
Budget	0.3%	May 23, 2016	September 15, 2016	
		Explanation of Progress		
		The Master Plan was filed in early 2018, but ongoing work continues to advance its goals.		
Key Performance Indicators				
(Commitments vs. Plan-to-Date)				
Budget Commitment	100%			

Offshore Pre-Development Activities Performance Profile

Initiative Size Relative to Portfolio		Key Initiative Dates		
NYSERDA MD and I&R Portfolio		Approval:	Launch:	Refiling Approved:
Budget	0.6%	May 23, 2016	December 12, 2016	
		Explanation of Progress		
		In addition to significant activity from previous years, NYSEDA is developing plans for deploying one or more buoys for measuring wind, wave, and other data in 2019. NYSEDA has also developed and published a Supply Chain Database, as well as a 2018 Ports Assessment which analyzes some of the port infrastructure opportunities across the State. NYSEDA is scoping additional supply chain and infrastructure-related studies to support the pre-development of offshore wind in New York State.		
Key Performance Indicators				
(Commitments vs. Plan-to-Date)				
Budget Commitment	93%			

REV Technical Assistance

REV Connect Performance Profile

Initiative Size Relative to Portfolio NYSERDA MD and I&R Portfolio	
Budget	0.1%
Leveraged Funds	0%
Top 15 Investment Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	99%
Leveraged Funds	13%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	May 23, 2016	August 9, 2016	

Explanation of Progress
Leveraged Funds to date by solution providers in the market (facilitated by REV Connect) is proving to be very difficult to quantify. That said, leveraged funds is expected to surge as the 11+ partnerships in formation increase in number and begin to move closer to market deployment in 2019.
REV Connect was recognized in the 4th Quarter as the winner of Utility Dive 2018 National Project of the Year; REV Connect was also profiled in a three part Public Utility Fortnightly feature story.

Energy Storage

Reducing Barriers to Distributed Deployment Performance Profile

Initiative Size Relative to Portfolio NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	0.4%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	66%
EE Annual MWh Savings	74%
EE Annual MMBtu Savings	n/a
Lifetime CO2e Reduction	75%
Leveraged Funds	40%
Lifetime Customer Bill Savings	85%
Participants	67%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	September 17, 2016	November 7, 2016	April 19, 2017

Explanation of Progress
The PSC's late 2018 landmark Energy Storage Order established a 3,000 MW target by 2030, building upon the 1,500 MW advanced storage target by 2025 already established by Governor Cuomo. This investment plan will be rescoped as required to complement the Storage Order including development of an estimated \$400 million in market acceleration bridge incentives for energy storage. New York City is in the process of promulgating rules for storage permitting in exterior applications, and working to develop interior siting guidelines. NYSEDA is completing a storage permitting guide for use by authorities having jurisdiction statewide.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Solar Plus Storage Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2.0%
Leveraged Funds	1%
Top 15 Investment Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	0%
Leveraged Funds	0%
Participants	0%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	September 11, 2018	October 25, 2018	

Explanation of Progress
Initiative launched October 2018. First applications and awards anticipated Q1 2019.

Clean Transportation

Electric Vehicle - Rebate Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
CO2e	3%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	54%
EE Annual MWh Savings	n/a
EE Annual MMBtu Savings	61%
Lifetime CO2e Reduction	50%
Leveraged Funds	51%
Lifetime Customer Bill Savings	n/a
Participants	52%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	August 17, 2016	March 21, 2017	

Explanation of Progress
There is less direct participation than expected in the NYSEDA rebate program which can be attributed to only ~60% of eligible EV sales utilizing the rebate since the program launched. ROI is as expected for this initiative and broader market growth of EVs is strong and aligned with original forecast. More than 15,000 electric cars were sold in New York in 2018, a 50% increase over 2017. Between March 2017, when the Drive Clean Rebate started, and November 2018, more than 22,000 EVs have been sold in New York, second among states only to California.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Agriculture

2030 Greenhouse Lighting and Systems Engineering (GLASE) Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.3%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	100%
EE Annual MWh Savings	100%
EE Annual MMBtu Savings	n/a
Lifetime CO2e Reduction	100%
Leveraged Funds	100%
Lifetime Customer Bill Savings	109%
Participants	93%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	September 15, 2016	January 1, 2017	

Explanation of Progress
Consortium membership growing with variety of controlled environmental agriculture market actors.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Advancing Agricultural Energy Technologies Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.2%
CO2e	0%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	10%
EE Annual MWh Savings	-
EE Annual MMBtu Savings	n/a
Lifetime CO2e Reduction	-
Leveraged Funds	-
Lifetime Customer Bill Savings	-
Participants	-

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	December 1, 2017	December 12, 2018	

Explanation of Progress
Initial solicitation is now available to the public with first round responses due in February 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Low- to Moderate-Income

Healthy Homes Feasibility Study Performance Profile

Initiative Size Relative to Portfolio NYSERDA MD and I&R Portfolio		Key Initiative Dates			
Budget	0.01%	Approval:	Launch:	Refiling Approved:	
		August 31, 2016	January 20, 2017		
Key Performance Indicators (Commitments vs. Plan-to-Date)		Explanation of Progress			
Budget Commitment	99%	The pilot is substantially designed and funding for the pilot will be included in a new Investment Plan to be filed in February 2019.			

Low-To Moderate Income Multifamily Performance Profile

Initiative Size Relative to Portfolio NYSERDA MD and I&R Portfolio		Key Initiative Dates									
Budget	3%	Approval:	Launch:	Refiling Approved:							
CO2e	1%	February 29, 2016	May 19, 2016								
Top 15 Carbon Impact	No										
Key Performance Indicators (Commitments vs. Plan-to-Date)		Explanation of Progress									
Budget Commitment	66%	Program intake doubled in 2018 compared to 2017. NYSERDA has launched new communication and outreach efforts to continue to improve program intake. Based on marketing indicators and market insights, intake is expected to continue to increase and reach projected intake in 2019. Early projects in the program were smaller buildings than anticipated, resulting in lower savings and participation than expected.									
EE Annual MWh Savings	97%										
EE Annual MMBtu Savings	76%										
Lifetime CO2e Reduction	81%										
Leveraged Funds	37%										
Lifetime Customer Bill Savings	72%										
Participants	75%										
		Sectors Served									
		Residential	<input type="checkbox"/>	Multifamily	<input checked="" type="checkbox"/>	Commercial	<input type="checkbox"/>	Industrial	<input type="checkbox"/>	Transport.	<input type="checkbox"/>

Single-Family Low-Income Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	10%
CO2e	1%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	90%
EE Annual MWh Savings	92%
EE Annual MMBtu Savings	114%
Lifetime CO2e Reduction	108%
Leveraged Funds	0%
Lifetime Customer Bill Savings	108%
Participants	89%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		February 29, 2016	March 1, 2016

Explanation of Progress
The program is making steady progress towards goals. In 2018, the program leveraged other funding sources which put performance slightly behind plan. The program expects to meet all planned benefits, catching up where pace slowed in 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Single-Family Moderate-Income Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	3%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	80%
EE Annual MWh Savings	111%
EE Annual MMBtu Savings	87%
Lifetime CO2e Reduction	91%
Leveraged Funds	107%
Lifetime Customer Bill Savings	84%
Participants	95%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		February 29, 2016	March 1, 2016

Explanation of Progress
Similar to Low Income, the Moderate Income program is making steady progress towards goals. In 2018, the program leveraged other funding sources which put performance slightly behind plan. The program expects to meet all planned benefits, catching up where pace slowed in 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Low-Income Forum on Energy Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.1%

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	92%
Participants	135%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		August 31, 2016	August 31, 2016

Explanation of Progress
The initiative is exceeding projected participation through webinars and events. The team is planning a series of regional meetings to be held Spring 2019.

RetrofitNY Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
CO2e	8%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	13%
EE Annual MWh Savings	0%
EE Annual MMBtu Savings	0%
Lifetime CO2e Reduction	0%
Leveraged Funds	-
Lifetime Customer Bill Savings	0%
Participants	0%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		August 31, 2016	April 4, 2017

Explanation of Progress
Six design/construction teams designed retrofit solutions on six affordable housing buildings in early June 2018 under RFP 3750. Final deliverables have been received by NYSEDA in December 2018 and are under review.
It is anticipated that some or all of the six buildings for which solutions were designed under RFP 3760 will be the first pilot buildings and will go to construction in 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

REVitalize Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.04%
CO2e	0.3%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	43%
EE Annual MWh Savings	n/a
EE Annual MMBtu Savings	n/a
Renewable Energy Annual MWh	79%
Lifetime CO2e Reduction	79%
Leveraged Funds	79%
Lifetime Customer Bill Savings	66%
Participants	80%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		August 31, 2016	June 27, 2017

Explanation of Progress
A decision to hold tool kit development, ensuring alignment with the solar predevelopment and technical assistance program, has resulted in the program falling behind planned commitments pace. It is expected to gain traction in 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Low-Income Community Solar Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	109%
Participants	0%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		December 1, 2017	May 24, 2018

Explanation of Progress
The first round of Solar for All projects were contracted during Q4 2018. The first round includes nine community projects with a total capacity of 9 MW dedicated to the Solar for All program and serving customers in the NYSEG, National Grid, Central Hudson, and Orange & Rockland utility territories. In addition to savings on participant electric bills, some of the selected projects have also committed to additional community benefits, including donations to local organizations serving families in need, educational programs for local schools, and committing additional project capacity to subscriptions for moderate income households.

Workforce Development and Training

Industry Partnerships Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	9%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	111%
EE Annual MWh Savings	119%
EE Annual MMBtu Savings	122%
Lifetime CO2e Reduction	120%
Leveraged Funds	96%
Lifetime Customer Bill Savings	133%
Participants	135%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	September 15, 2016	January 13, 2017	

Explanation of Progress
Program is currently exceeding expectations for benefits, due in large part to increased participation by portfolio companies with multiple buildings impacted.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Clean Technology and Energy Efficiency Talent Pipeline Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	3%
Leveraged Funds	0.9%
Top 15 Investment Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	71%
Leveraged Funds	431%
Participants	48%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	July 22, 2018	October 15, 2018	

Explanation of Progress
Three talent pipeline solicitations were successfully launched this quarter in coordination with the release of the 2018 Clean Energy Industry Report.

Renewable Heating and Cooling

Heat Pumps and Solar Thermal Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	98%
EE Annual MWh Savings	
EE Annual MMBtu Savings	126%
Lifetime CO2e Reduction	103%
Leveraged Funds	382%
Lifetime Customer Bill Savings	110%
Participants	41%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		May 16, 2017	May 30, 2017

Explanation of Progress
Benefits remain on target or exceeding due to larger impact per project than expected, although participation metrics lag relative to plan.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Renewable Heat NY Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	0.1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	85%
EE Annual MWh Savings	n/a
EE Annual MMBtu Savings	266%
Lifetime CO2e Reduction	203%
Leveraged Funds	58%
Lifetime Customer Bill Savings	217%
Participants	120%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		May 16, 2017	May 16, 2017

Explanation of Progress
NYSERDA continues to see strong interest and market uptake on wood pellet stoves while biomass boiler activity lags.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Clean Energy Products

Underutilized Product Support Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	3%
CO2e	15%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	90%
EE Annual MWh Savings	n/a
EE Annual MMBtu Savings	95%
Lifetime CO2e Reduction	96%
Leveraged Funds	49%
Lifetime Customer Bill Savings	83%
Participants	45%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		May 16, 2017	August 17, 2017

Explanation of Progress
The Air Source Heat Pump program is performing as expected. Advanced Rooftop Unit program was placed on hold, and the short term focus has shifted to a wider Commercial HVAC solution, including Variable Refrigerant Flow (VRF) HVAC systems. Research on product and appliance standards continued in Q4 2018.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Multi-Sector Solutions

(EE) Soft Cost Challenge Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	2%
EE Annual MWh Savings	0%
EE Annual MMBtu Savings	0%
Lifetime CO2e Reduction	0%
Leveraged Funds	0%
Lifetime Customer Bill Savings	0%
Participants	0%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		July 19, 2017	TBD

Explanation of Progress
The EE Soft Cost Challenge remains on hold in an effort to better align with other market interventions and planned market studies.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Technical Services Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	2%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	125%
EE Annual MWh Savings	71%
EE Annual MMBtu Savings	106%
Lifetime CO2e Reduction	83%
Leveraged Funds	47%
Lifetime Customer Bill Savings	83%
Participants	680%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	October 3, 2017	November 9, 2017	

Explanation of Progress
 The initiative has made good progress against its current implementation milestones. Performance of the On-site Energy Manager Program exceeded expectations after one year of operation. The second component of Technical Services, the Energy Study Aggregation Program, which launched at the end of Q2 2018, is currently lagging. NYSERDA is evaluating opportunities to refine the offering to increase uptake with changes expected the first half of 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Clean Energy Advanced Market Performance (AMP) Challenge Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	93%
EE Annual MWh Savings	150%
EE Annual MMBtu Savings	548%
Renewable Energy Annual MWh	18%
Lifetime CO2e Reduction	266%
Leveraged Funds	40%
Lifetime Customer Bill Savings	252%
Participants	150%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	December 1, 2017	May 14, 2018	

Explanation of Progress
 Initial clean energy projects from the first round of energy projects indicate very cost-effective carbon reductions.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Clean Energy Siting and Soft Cost Reduction Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	21%
Participants	463%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		December 1, 2017	March 9, 2018

Explanation of Progress
The initiative is overperforming due to greater than expected market demand and requests from local officials.

Pay for Performance Pilot Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	3%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	59%
EE Annual MWh Savings	-
EE Annual MMBtu Savings	-
Lifetime CO2e Reduction	-
Leveraged Funds	-
Lifetime Customer Bill Savings	-
Participants	-

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		September 7, 2018	Anticipated Q3 2019

Explanation of Progress
New initiative that is anticipated to launch in Q3 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Codes

Code to Zero Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	5%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	21%
EE Annual MWh Savings	-
EE Annual MMBtu Savings	-
Lifetime CO2e Reduction	-
Leveraged Funds	-
Lifetime Customer Bill Savings	-
Participants	0%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		December 1, 2017	December 13, 2017

Explanation of Progress
Delivered draft NYStretch Energy Code to New York City supporting their Energy Code rulemaking schedule. Training for code officials was delivered during 2018 with non-CEF funds. Support for NYS Dept of State's energy code update and rulemaking commenced in Q4 2018. Roadmapping effort to codify stretch-to zero was initiated in Q3 2018 and has expanded in scope, involving a cross-functional NYSEDA team.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

On-Site Power

Fuel Cells Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	0.2%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	14%
EE Annual MWh Savings	13%
EE Annual MMBtu Savings	n/a
Lifetime CO2e Reduction	13%
Leveraged Funds	3%
Lifetime Customer Bill Savings	17%
Participants	7%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		December 1, 2017	May 3, 2018

Explanation of Progress
Although market uptake appears to be lagging plans (based on applications received deemed full-and-complete), additional applications have been received and are under review (the magnitude of these additional applications brings the program nearly on-par with planned progress).

Sectors Served

Residential Multifamily Commercial Industrial Transport.

New Construction

New Construction Market Rate Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	7%
CO2e	7%
Top 15 Carbon Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	27%
EE Annual MWh Savings	14%
EE Annual MMBtu Savings	0%
Renewable Energy Annual MWh	70%
Lifetime CO2e Reduction	20%
Leveraged Funds	74%
Lifetime Customer Bill Savings	28%
Participants	13%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		August 31, 2016	June 27, 2017

Explanation of Progress
A decision to hold tool kit development, ensuring alignment with the solar predevelopment and technical assistance program, has resulted in the program falling behind planned commitments pace. It is expected to gain traction in 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

New Construction Low Income Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	1%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	10%
EE Annual MWh Savings	0%
EE Annual MMBtu Savings	0%
Lifetime CO2e Reduction	0%
Leveraged Funds	0%
Lifetime Customer Bill Savings	0%
Participants	0%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
		December 1, 2017	April 12, 2018

Explanation of Progress
The program is behind pace largely due to the extended utilization of RAT funding and a subsequent delay in the launch of Buildings of Excellence program, now slated for Q1 2019 release. The program is expected to get back on track and reach planned benefits, although the timeframe will change. The plan will be updated early 2019.

Sectors Served

Residential Multifamily Commercial Industrial Transport.

Residential

Engaging New Markets Initiative

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
CO2e	0.4%
Top 15 Carbon Impact	No

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	46%
EE Annual MWh Savings	-
EE Annual MMBtu Savings	-
Lifetime CO2e Reduction	-
Leveraged Funds	-
Lifetime Customer Bill Savings	-
Participants	-

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	December 1, 2017	Anticipated Q1 2019	

Explanation of Progress

The initial consumer education and awareness activities to update NYSERDA's website have been completed. The home energy rating pilots are expected to be in market Q2 2019. Planning is underway for additional strategies for Engaging New Markets.

Sectors Served

- Residential Multifamily Commercial Industrial Transport.

4 Innovation and Research Initiative Specific Results

Table 9. Innovation and Research Initiative Level Budgets and Spending

See Endnotes for more information^{12,13}

Initiative	Budget Approved as of December 31, 2018 ^a	Expended Funds ^b	Committed Funds ^c	Total Progress ^d	% of Approved Budget Committed ^e	Budget Approved Remaining Balance ^f
Market Characterization & Design Chapter	\$250,000	\$653	-	\$653	0%	\$249,347
Grid Modernization Chapter						
DER Interconnection	\$6,300,000	\$1,798,358	\$889,527	\$2,687,885	43%	\$3,612,115
High Performing Grid	\$110,500,000	\$3,104,607	\$10,164,154	\$13,268,761	12%	\$97,231,239
Next Generation Power Electronics	\$16,700,000	\$14,627,380	\$2,072,620	\$16,700,000	100%	-
Grid Modernization Chapter Total	\$133,500,000	\$19,530,345	\$13,126,301	\$32,656,646	24%	\$100,843,355
Innovation Capacity and Business Development Chapter						
CleanTech Startup Growth	\$58,200,000	\$3,682,715	\$14,632,376	\$18,315,092	31%	\$39,884,908
Manufacturing Corps	\$12,000,000	\$484,924	\$3,652,000	\$4,136,924	34%	\$7,863,076
Novel Business Models and Offerings	\$16,100,000	\$33,918	-	\$33,918	0%	\$16,066,082
Innovation Capacity and Business Development Chapter Total	\$86,300,000	\$4,201,558	\$18,284,376	\$22,485,934	26%	\$63,814,066
Building Innovation Chapter						
NextGen HVAC	\$15,000,000	\$530,698	\$9,334,317	\$9,865,014	66%	\$5,134,986
Building Innovation Chapter Total	\$15,000,000	\$530,698	\$9,334,317	\$9,865,014	66%	\$5,134,986
Clean Transportation Chapter						
Electric Vehicles	\$11,850,000	\$820,053	\$3,413,054	\$4,233,107	36%	\$7,616,893
Public Transportation and Electrified Rail	\$18,500,000	\$177,803	\$515,318	\$693,120	4%	\$17,806,880
Clean Transportation Chapter Total	\$30,350,000	\$997,856	\$3,928,371	\$4,926,227	16%	\$25,423,773
Energy-Related Environmental Research Chapter						
Environmental Research	\$30,000,000	\$1,286,934	\$6,790,919	\$8,077,853	27%	\$21,922,147
Energy-Related Environmental Research Chapter Total	\$30,000,000	\$1,286,934	\$6,790,919	\$8,077,853	27%	\$21,922,147
Renewables Optimization Chapter						
Energy Storage Innovations	\$33,000,000	\$761,453	\$4,688,033	\$5,449,486	17%	\$27,550,514
National Offshore Wind Research & Development Consortium	\$22,500,000	\$2,581	-	\$2,581	0%	\$22,497,419
Renewables Optimization Chapter Total	\$55,500,000	\$764,034	\$4,688,033	\$5,452,067	10%	\$50,047,933
NYS Cost Recovery Fee	\$8,881,262	\$401,734	-	\$401,734	5%	\$8,479,528
Innovation Capacity and Bus. Dev. Chapter Total	\$359,781,262	\$27,713,812	\$56,152,317	\$83,866,128	23%	\$275,915,135

Table notes are on the next page

* Totals may not sum exactly due to rounding

- a Funds approved by DPS as of December 31, 2018.
- 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.

Grid Modernization

Distributed Energy Resource (DER) Interconnection Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	0.4%
Leveraged Funds	0.1%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	43%
Leveraged Funds	63%
Participants	69%

Key Initiative Dates	Approval:	Launch:		
	May 23, 2016	October 20, 2016		

Explanation of Progress
Commitment of the remaining funds has been delayed pending completion of projects from PON 3404 (DER Interconnection) and resolution of several technical issues by the New York Interconnection Technical Working Group. Both of these factors have been completed allowing NYSERDA to identify specific interconnection challenges needing further study with a plan to commit additional funds via competitive solicitation in the first half of 2019.
<i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i>

High-Performing Grid Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	6%
Leveraged Funds	4%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	30%
Leveraged Funds	35%
Participants	154%

Key Initiative Dates	Approval:	Launch:		
	May 23, 2016	September 16, 2016		

Explanation of Progress

In 2018 the program shifted to a rolling solicitation format , a move praised by the marketplace but one that inadvertently delayed proposals. The format has been adjusted going forward encouraging more timely submissions. December 2018 a solicitation closed with 28 proposals received. These proposals are being reviewed now with awards expected early 2019. The lagging pace of commitments and leveraged funds is due in part to an aggressive forecast and also due to smaller than expected proposals (scale). NYSERDA is incorporating market feedback into forward looking plans and still expects to achieve program goals.

** Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.*

Next Generation Power Electronics Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
Leveraged Funds	1%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	100%
Leveraged Funds	169%
Participants	150%

Key Initiative Dates	Approval:	Launch:		
	July 19, 2017	October 13, 2017		

Explanation of Progress

The initiative is performing very well against its performance metrics and is exceeding planned values.

** Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.*

Innovation Capacity and Business Development

Cleantech Startup Growth Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	3%
Leveraged Funds	5%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	78%
Leveraged Funds	73%
Participants	24%

Key Initiative Dates	Approval:	Launch:		
		May 23, 2016	October 12, 2016	

Explanation of Progress
The initial metrics from the individual programs that have already launched are promising. Progress will be reassessed in Q1 2019 when metrics from the prior reporting period are fully collected.
<i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i>

Manufacturing Corps Initiative Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
Leveraged Funds	1%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	100%
Leveraged Funds	70%
Participants	172%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:	
		February 14, 2017	June 29, 2017	September 24, 2018

Explanation of Progress
Manufacturing Corps is progressing according to plan in terms of budget commitment and has exceeded expectations in terms of the number of participants attracted. The lag in leveraged funds is due to the timing of data collection and is expected to be more aligned with planned values in early 2019.
<i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i>

Novel Business Models and Offerings Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
Leveraged Funds	2%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	1%
Leveraged Funds	0%
Participants	0%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	December 1, 2017	September 26, 2018	

Explanation of Progress
Novel Business Models and Offerings launched in Q3 2018 and the first benefits are expected to be recorded in Q1/Q2 2019.
<i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i>

Building Innovation

NextGen HVAC Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
Leveraged Funds	1%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	102%
Leveraged Funds	58%
Participants	85%

Key Initiative Dates	Approval:	Launch:	Refiling Approved:
	February 14, 2017	June 29, 2017	September 24, 2018

Explanation of Progress
The initiative is progressing well in terms of budget commitment and participant engagement. The Round 2 innovation challenge, focusing on Heat Pumps, HVAC Controls and Compressorless HVAC, was completed in October 2018 resulting in eight awards for a total of \$4.5M. Rounds 3 of 4 were launched December 6, 2018 with concept papers due January 17, 2019. Challenge areas include Heat Pumps, Thermal Distribution, and an "Open" challenge intended to capture opportunities not identified by current and past innovation challenges.
<i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i>

Clean Transportation

Electric Vehicles - Innovation Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
Leveraged Funds	0.4%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	72%
Leveraged Funds	67%
Participants	138%

Key Initiative Dates	Approval:	Launch:		
		August 17, 2016	September 15, 2017	

Explanation of Progress
<p>This initiative is performing well in terms of attracting participants. Progress on budget commitment and leveraged funds is anticipated to catch up to plan by Q1 2019 as more contracts are expected to be awarded within that timeframe.</p> <p><i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i></p>

Public Transportation and Electrified Rail Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
Leveraged Funds	1%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	15%
Leveraged Funds	28%
Participants	33%

Key Initiative Dates	Approval:	Launch:		
		October 3, 2017	February 22, 2018	

Explanation of Progress
<p>This initiative was launched in early 2018 and is still ramping up activity. Progress is expected to catch up to planned values by Q1 2019 as more contracts are expected to be awarded within that timeframe.</p> <p><i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i></p>

Energy Related Environmental Research

Energy Related Environmental Research Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
Leveraged Funds	0.1%
Top 15 Investment Impact	No

Key Performance Indicators* (Commitments vs. Plan-to-Date)	
Budget Commitment	43%
Leveraged Funds	90%
Participants	152%

Key Initiative Dates	Approval:	Launch:		
		February 14, 2017	February 15, 2017	

Explanation of Progress
<p>Although funding commitment is lower than expected at this point in time, the initiative is still on track to achieve the expected planned benefits for leveraged funds and participants. Progress on budget commitment is accelerating.</p> <p><i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i></p>

Renewables Optimization

Energy Storage Innovations Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	2%
Leveraged Funds	2%
Top 15 Investment Impact	Yes

Key Performance Indicators (Commitments vs. Plan-to-Date)	
Budget Commitment	86%
Leveraged Funds	89%
Participants	50%

Key Initiative Dates	Approval:	Launch:		
		March 27, 2017	June 21, 2017	

Explanation of Progress
<p>This initiative is currently lagging in the planned timeframe for awarding contracts from competitive solicitations. Progress on this metric is anticipated to catch up to plan as more contracts are expected to be awarded in Q1 2019.</p>

National Offshore Wind Research and Development Consortium Performance Profile

Initiative Size Relative to Portfolio	
NYSERDA MD and I&R Portfolio	
Budget	1%
Leveraged Funds	1%
Top 15 Investment Impact	No

Key Performance Indicators *	
(Commitments vs. Plan-to-Date)	
Budget Commitment	0.1%
Leveraged Funds	11%
Participants	200%

Key Initiative Dates	Approval:	Launch:		
	September 11, 2018	October 1, 2018		

Explanation of Progress
<p>This newly launched initiative is progressing well, laying the groundwork for engaging the marketplace.</p> <p><i>* Several Innovation & Research programs capture performance data less frequent than quarterly, therefore there may be a lag in reporting progress against participant and leveraged funds KPIs.</i></p>

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 392 sites are currently enrolled in the program. Initial projects have resulted in increased energy efficiency in tenant spaces and have "primed" the sector for more energy efficiency projects. A major PON revision is in the planning stages for Q1 2019 and aims to increase participation and drive deeper energy savings in tenant spaces.
	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 in the planning for the spring 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 leveraging information from a generic package to engage tenants, such as developing tenant design guidelines and using the information from a generic package to inform a test fit out.
	2018–2024	Projects demonstrate that building-specific packages can be used within the normal timeframe of the tenant fit-out process and do not slow down the process.	As more building owners commission generic packages for their tenants, NYSERDA will be able to assess how successful these packages are as engagement tools for tenants.
	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 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 2019.
	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

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 290 buildings are participating in approved RTEM projects with installation/services underway and a project pipeline of 80 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. 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	Secure REM Advisor and begin development of market standards.	Contractors selected through REM RFP 3681 began market engagement in Q2 2018. This effort will inform the development of market standards.
✓	2017–2020	Create and grow a list of qualified REM vendors.	Through RFP 3681, NYSERDA selected a group of REM vendors to start the REM program. Contracting with vendors completed in Q2 2018, and vendors are now engaging the market.
	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.	M&V work has begun on sample RTEM projects by the RTEM Advisor and team to fully analyze savings.
	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.
	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.

Near-Term Milestones for Energy Management Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017–2020	RTEM Technical Guidance Document is drafted and tested. RTEM Technical Guidance Document is published.	NYSERDA created the initial installment of an “RTEM buying guide” targeted at end-use customers. The first seven chapters of this buying guide were workshopped with qualified RTEM vendors and industry experts, and the customer buying guide is now on the RTEM program website.
	2017–2020	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 currently.
	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.
	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, 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.

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 104 institutions signed up as of the end of 2018.
	2016–2019	Members make progress and receive recognition as demonstrated by new and revised planning, new commitments to sustainability goals, and clean energy projects started and completed.	REV Campus Challenge annual workshops were held in April and May 2018, with four members hosting and having the opportunity to discuss on-campus projects and have students present. NYSERDA is coordinating with the Association for the Advancement of Sustainability in Higher Education (AASHE) to assist REVCC members in developing and submitting to the AASHE weekly newsletter (distributed nationally). 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.

Near-Term Milestones for K-12 Schools

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Launch a clean energy benchmarking open enrollment program.	The Program will launch in Q1 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, we had a meeting with the State Education Department - Office of Facilities Planning to discuss how the FlexTech Program could support the development of Energy Master Plans for the P-12 sector.
	2018	Launch a competitive solicitation to provide gap assistance.	The competitive solicitation for gap assistance will launch in 2019.

Near-Term Milestones for Continuous Energy Improvement

On-Site Energy Manager

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2016 and 2017	Industrial end-user commitment to energy goal creation and realization is key to successful On-site Energy Manager engagements.	Energy goals are created as part of the application process and are confirmed in the Energy Management Plans that are submitted in the first quarter of the engagements. Nine total applications have been received with energy goals stated and seven Energy Management Plans have been submitted and approved with confirmed annual energy goals averaging 7% of site annual energy usage.
✓	2016 and 2017	Robust tracking and reporting of energy and nonenergy benefits of the On-site Energy Manager role.	Robust tracking and reporting of energy and non-energy benefits occurs on a quarterly basis for the active industrial projects (four reports approved this reporting period).
	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 will be shown in the final deliverables (final reports, case studies, and road maps). Final deliverables from first five projects have been approved and will be dissemination.
	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 via the OsEM webpage. The first five projects are in the process of publication.
✓	2018	Long-term energy resource(s) dedicated to energy management, without NYSERDA support (e.g., manufacturer hires energy manager in-house; continues with On-Site Energy Manager consultant; or with a new consultant).	Two industrial sites retained the OsEM in a permanent role without additional financial support; the others have indicated a desire to leverage technical assistance offerings or additional contracted support.
✓	2018	Transition of knowledge and tools from pilot On-site Energy Managers to long-term energy resource.	Six projects have completed the engagement period and have transferred knowledge and tools to either a permanent or contracted long term energy resource.
	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.	Case studies and road maps will be developed for each project and distributed to the market via the OsEM webpage. The first five projects are in the process of publication.

Near-Term Milestones for Continuous Energy Improvement

Strategic Energy Management

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2016 and 2017	<p>Facilities understand how energy intensity is embedded in their process and have integrated energy management into their organizational culture.</p> <p>Facilities possess knowledge of Strategic Energy Management (have an energy map, identified goals and metrics, and developed a project register identifying projects and an action plan for project implementation) and have a system for monitoring, tracking, and making decisions based on their energy use.</p>	<p>The initial Strategic Energy Management solicitation (PON 3411) was released in November 2016. Eight participants were selected to participate in the first industrial cohort. The kick-off workshop for the cohort was held in September 2017. As of May 2018, all participants have an energy map, identified savings opportunities, are developing project registers and plans for project implementation, and are developing employee engagement activities at their facilities. The solicitation for the second industrial cohort was released in December 2017 and eight industrial customers comprise the second pilot which began in Q3 2018. The first Strategic Energy Management solicitation for a Waste Water Cohort was released in Q2 2018. The 2017 Cohort wrapped up Year 1 in September 2018; at the same time the 2018 kicked off Year 1. The 2017 cohort has completed all activities outlined in this milestone.</p>
✓	2017 and beyond	<p>Facility executives value and adopt Strategic Energy Management due to organizational change and systematic energy management that enables them to identify attractive investments for their facility.</p> <p>Continuation of energy champion and team beyond the cohort (for participating facilities) or the adoption of an energy champion and/or team (for new facilities). Executive support to implement energy-related projects.</p>	<p>All the energy teams and energy champions have continued beyond the end of Year 1 for the 2017 cohort. Facilities participating in SEM have also found they receive executive support, in some facilities this support is greater than prior to their participation in SEM, to implement energy-related projects.</p>
	2018 and beyond	<p>Industrial facilities seek out developed information and standardized tools as well as contractor support to implement and adopt SEM.</p> <p>Tracked inquiries and dissemination of case studies, training, SEM resources, and vetted consultant list.</p>	<p>The materials are in development and information from the first cohort's successes is being collected. One case study is complete, and two others are in the queue.</p>
	2018 and beyond	<p>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.</p> <p>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.</p>	<p>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).</p>

Near-Term Milestones for Continuous Energy Improvement Initiative
 Energy Management Information Systems

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2019	Distribute list of qualified EMIS vendors.	Through RFP 3681, NYSERDA has an established and growing list of service and software vendors available on NYSERDA’s website by Market Sector focus. Vendors are engaging the marketplace.
	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 1/2/19, 233 communities completed at least four actions and are officially designated Clean Energy Communities. In total, 516 Communities completed 1,410 High-Impact Actions, 1,218 of which were completed after program launch ('new').</p> <p>Anticipated savings from the 1,218 ‘new’ completed High-Impact Actions and the 177 grant projects that are either awarded or underway (when combined with savings reported in Regional Greenhouse Gas Initiative [RGGI] reporting), include:</p> <ul style="list-style-type: none"> • 193,257 MWh Efficiency Savings • 103,051 MWh Renewable Generation • 87.81 MW Renewable Generation • 757,784 MMBtu Natural Gas Savings • 38,230 MMBtu Gasoline Savings • 169,305 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 Q1 2019 and executed in Q2 2019.
	2018–2020	NYSERDA develops one or more case studies on regional-specific pilot projects and other support provided through the base activities.	Outreach kicked off in May of 2018. NYSERDA expects to begin developing case studies in early 2019. The first case studies will likely focus 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.	

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).	<p>Planning and stakeholder outreach started for procurement and deploying of a buoy for measuring site-specific wind, wave and other data. Contractor hired to assist in developing measurement campaign. Draft Metocean Plan published November 2016.</p> <p>Additional planning started in Q1 2017 for site-specific environmental, sea floor, and other studies and surveys.</p> <p>Multi-beam sonar and sediment profile imaging survey of sea floor undertaken in June through August 2017 with final report completed by December 31, 2017 and published January 29, 2018.</p> <p>Working on plan for deploying one or more buoys for measuring wind, wave, and other data, deployment expected in Q1/Q2 in 2019.</p> <p>Contractors have been hired to build a supply chain database and a cost assessment of New York port infrastructure. Both studies were completed in Q4 2018.</p>

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Safety testing is completed on additional emerging commercial chemistries.	UL 9540/9540A standard may provide sufficient testing requirements to alleviate the need for additional NYSERDA testing on battery chemistries. This would create a prescriptive testing path for developers to follow when seeking approval for energy storage installations in NYC. Facilitated independent testing at company's expense for a new chemistry by UEP seeking permitting in NYC; specific plans for additional chemistries to be tested.
✓	2018	Model permitting guides are updated.	Outdoor energy storage permitting guide for New York City published and being examined as city agencies develop regulations/bulletin.
	2018	Pilots convert prospective installations into installed energy storage projects that are used to provide customer benefit and address electric system needs.	Applications under value stacking PON increased with expanded outreach and are starting to build a pipeline of potential projects. Three projects have been awarded.
	2019	Independent validation assesses the ability of aggregated customer-sited storage systems to provide locational relief to the distribution utility or NYISO when called upon.	
	2019	During the pilot period, NYSERDA's direct support for specific projects is reduced annually as installation cost decreases, revenue opportunities are better quantified, and results of pilots increase performance confidence.	

Near-Term Milestones for Solar Plus Energy Storage

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Launch changes to the NY-Sun program providing incentives for paired solar plus energy storage projects.	Changes to offer incentives for paired solar plus storage were launched as part of NY-Sun Program Opportunity Notice 3082 and 2112 on October 25, 2018.
✓	2018	Participation in IPWG and ITWG meetings throughout the year to address issues of adding storage to solar.	Solar plus storage issues have been on the ITWG agenda in 2018. Interim Guideline was finalized for adding storage to solar project applications already being processed by the Utilities. Additional topics important to solar plus storage are being drafted and considered for future IPWG/ ITWG meetings.
	2018–2020	Award incentives to solar plus storage projects.	The solar plus storage offering became available under NY-Sun on October 25, 2018, so no awards have been made yet. Utility interconnection acceptance is a requisite for solar plus storage projects to apply to NY-Sun.
	2019–2021	Completion of solar plus storage projects.	
	2019	Publish case studies with learnings from initial solar plus storage projects.	

Near-Term Milestones for Solar Plus Energy Storage Continued

	2019	Participation in IPWG and ITWG meetings throughout the year to address issues of adding storage to solar.	
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Near-Term Milestones for Electric Vehicles Initiative: EV Rebate

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2017	EV Rebate Program Launch.	As of December 31, 2018, more than 580 car dealers signed up for the program and applications for more than 12,000 rebates have been approved, totaling more than \$17 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. It is anticipated that the business plan will be updated in Q1 of 2019.
	2018	Monitor small (6,000 square feet) pilot demonstration of a basic light and shade control system.	The initial host site went out of business. The principal investigator has located a new site and is working on an agreement that is expected to be finalized in Q1 2019. It is anticipated that 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 on the demonstration project.
	2019	Monitor small (6,000 square feet) pilot demonstration of CO ₂ supplementation integrated with the light and shade control system.	
	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.	

Near-Term Milestones for Advancing Agricultural Energy Technologies

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Issue Solicitation to select teams of technology vendor and farms to demonstrate technologies.	Program Opportunity Notice 3809 was issued on December 12, 2018 with two due dates; one on February 28, 2019 and the other on September 26, 2019.
	2019	Contract with teams to demonstrate underused and emerging technologies.	

Near-Term Milestones for RetrofitNY

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	One or more solutions are built and tested through the design-build competition.	Six design/construction teams started designing retrofit solutions on six affordable housing buildings in early June 2018. Final deliverables have been received by NYSERDA in December 2018 and are under review.
	2018	First pilot buildings are selected	It is anticipated that some or all the six buildings for which solutions are being designed under RFP 3760 will be the first pilot buildings.

Near-Term Milestones for REVitalize

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	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.	
	2019	NYSERDA refines toolkit and conducts technology transfer to communicate effective models of finance and ownership, as well as the toolkit.	

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.	
	2019	Implement a series of regional meetings across the State in Q2 of 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 Q1 2019.
	2017	Commencement of pilot activities.	Pilot implementation is expected to begin in Q2 2019.
	2018	Preliminary determination of health benefits and healthcare cost savings.	Contingent upon pilot implementation.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018–2021	Continue to evaluate market response to incentive levels and thresholds and adjust as needed.	Program intake doubled in 2018 compared to 2017. NYSERDA has launched new communication and outreach efforts to continue to improve program intake. Based on marketing indicators and market insights, intake is expected to continue to increase in 2019.

Near-Term Milestones for Low-Income Community Solar

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.	
	2018–2020	Execute additional agreements with community solar projects for low-income subscriptions, if needed.	

Near-Term Milestones for 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 Q1 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.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Issue clean energy training infrastructure and capacity building solicitation, round 1.	Program Opportunity Notice (PON) 3981 was launched October 15, 2018 and eight proposals were received.
	2018	Issue open enrollment OJT program.	Fourteen people have been hired through PON 3981 though Q4 2018
	2018	Issue open enrollment internship program.	Seventy-five interns and 26 businesses have signed up to participate through PON 3981 through Q4 2018. Two interns have been hired by businesses through the end of 2018.

Near-Term Milestones Heat Pumps and Solar Thermal

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Launch 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	Provide marketing toolkit and installer selection model solicitations to pilot community campaigns.	The marketing toolkit is under development using the Solarize marketing toolkit as a starting point. Installer selection model request for proposal will be developed by the Technical Assistance contractor using the HeatSmart RFP as a starting point.
✓	2018	Provide standardized contracts and best practices manual to market.	Development of the best practices and lessons learned guides relating to the Geothermal Campus Challenge eligible facilities are included in the contractor's scope of work and in process.
	2018	Complete assessment of M&V methodologies for system performance and share with market participants.	To be included as part of scope of work for consultants to be procured under NYPA to perform ASHRAE Level 2 audits and schematic designs. NYSERDA is collaborating with NYPA on the document.
	2019	Disseminate RH&C case studies and design and installation best practices to the market.	
	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 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 & NESCAUM on public health studies with an update to be provided in Q1 2019.
	2018	Contract with manufacturers selected under competitive solicitation.	This will begin once the competitive solicitation has been released and proposals selected.
	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.
	2019	Reissue workforce development program based on market feedback.	

Near-Term Milestones Underutilized Product Support

See Endnotes section for more information¹⁴

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 a Advanced Commercial HVAC Initiative. This milestone will be revised when Clean Heating and Cooling Investment Plan is revised in Q1 2019.
	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 will push 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.

Milestones 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 Q1 2019.
	2018	Issue competitive solicitation to identify and test alternative business models.	NYSERDA will work to identify, test, and expand existing business models in the energy efficiency retrofit space, especially into the small and medium business market. Possible options include expanding energy service agreements, leasing of efficient equipment, and promoting efficiency-as-a-service.
	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 in 2018.

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
	2018	Contract with third-party to support best practices development including the farm management best practices guide.	Work to solicit technical content for an energy-related farm management best practice guide began in Q4 2018.
	2019	Disseminate best practices materials.	
	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.	

Near-Term Milestones for Clean Energy Advanced Market Performance (AMP) Challenge

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with selected participants.	Proposals have been reviewed and awardees have been notified. Contracting is in process and expected to be completed in Q1 2019.
	2018	Finalize participants' Clean Energy Action Plans for 2019 during participants' capital planning cycles. Clean Energy Action Plan updates will be conducted on an annual basis with updates for 2020 and 2021 being made during capital planning cycles in 2019 and 2020, respectively.	Finalization of clean energy action plans will occur immediately after contracting.

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.	A bid was issued in March 2018 to hire contractors to support the Clean Energy Siting. NYSERDA received proposals from firms to provide technical assistance to local governments regarding all issues of Clean Energy Siting. Contracting is in process. Separately, a bid was issued to hire legal counsel—three legal firms were hired. Additionally, three contractors were hired to assist with code enforcement, site plan review, and land-use regulations.
	2018	Complete trainings for technical assistance providers.	Proposals from technical assistance providers were received in March 2018 but contractor selection and training have been placed on hold while the NYSERDA develops an outreach strategy Training will occur after technical assistance providers have been selected.
	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.	A statewide outreach and education campaign launched on March 9, 2018. A new role was created to oversee siting and soft cost reduction across all NYSERDA programs. NYSERDA completed a plan to reach out and meet with 2018 LSR solicitation host towns and continues to hold workshops.
	2018	Issue the incentive grant solicitation for authorities having jurisdiction taking significant steps to reduce solar soft costs.	This is currently in the planning stages with anticipation of launch later this year. The initial design is to provide authorities having jurisdiction with a grant when they adopt a Payment In-Lieu of Taxes agreement, the Solar Model Law, and the Unified Solar Permit.
	2018	Issue the Soft Cost Innovation solicitation.	This is on hold, the team pivoted to focus on resource development coinciding with New York State renewable goals.
	2018	Contract with Soft Cost Innovation award recipients.	
	2019	Compile and publish a document of all case studies to highlight best soft cost reduction strategies and clean energy-friendly communities.	NYSERDA has published the Solar Guidebook with additional chapters and has been working to update the Wind Guide, which is in the final stages of review. NYSERDA is also currently working on an Energy Storage Guide.

Near-Term Milestones for Pay for Performance

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Release key pilot design parameters for stakeholder feedback and complete P4P pilot design.	A stakeholder meeting for Phase 1 of the commercial portion of the Pilot was held on November 16, 2018. Feedback was incorporated into the Pilot Design for the remainder of 2018, allowing all major design elements of the Phase 1 commercial portion of the pilot to be completed. A residential stakeholder meeting is scheduled to occur in Q1 (February) of 2019 to enable the finalization of the residential portion of the Pilot Design.
✓	2018	Make available historical program performance data utilizing CalTRACK results.	On September 17, 2018, performance data from Home Performance with Energy Star Market Rate and Assisted projects from 2007-2012 was published on OpenNY. The savings data was calculated using the CalTRACK methodology. Measure specific data about these projects was posted shortly thereafter.
	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 is expected to be executed in 12 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 RFP will be released in April 2019 and the residential Portfolio Manager RFP will be released during the summer of 2019.
	2019	Execute Phase 1 aggregator contracts and begin Phase 1 work.	
	2019	Adjust design elements based on market feedback and prepare for Phase 2 solicitations.	

Near-Term Milestones for Code to Zero

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Issue NY Stretch-Energy stretching off IECC22 2018.	The final draft was delivered to NYC in October 2018 and negotiations are underway with a legal firm to perform legal review. Release of NYStretch to public is on hold until the review is completed. NYSERDA will issue a proposal in January 2019 for cost effectiveness analysis of NYStretch, which is expected to be completed in Q1 2019.
	2018	Issue Pilot #1 solicitation to pilot alternative enforcement structures.	NYSERDA began work on this milestone in Q2 2018. Voice of customer work began in Q4 2018 and is ongoing. NYSERDA conducting interviews with large, medium and small municipalities, attempting to sample from a number of regions in the state and targeting representatives from building departments as well as elected officials.
	2018	Issue Pilot #2 solicitation for pilot communities to adopt NY Stretch-Energy (IECC2018).	NYSERDA began work on this milestone in Q2 2018. Voice of customer began in November 2018 and will continue in Q1 2019. Solicitation development will begin in Q1 2019 with projected issuance in early Q2 2019.
	2018	Issue Pilot #1 solicitation to pilot alternative enforcement structures.	NYSERDA began work on this milestone in Q2 2018. Voice of customer work began in Q4 2018 and is ongoing. NYSERDA is 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.
	2018	Issue Pilot #2 solicitation for pilot communities to adopt NY Stretch-Energy (IECC2018).	NYSERDA began work on this milestone in Q2 2018. Voice of customer began in November 2018 and will continue in Q1 2019. Solicitation development will begin in Q1 2019 with projected issuance in early Q2 2019
	2018	Finalize plan to codify stretch-to-zero as baseline by 2030.	Part of New Buildings Institute (NBI) contract "Policy Analysis and Development to Support NY Climate Objectives" work on a roadmap started during Q3 2018. NBI is actively engaged with cross-functional NYSERDA team working on the Roadmap. Expected completion in 2019.
	2019	Contract Pilot(s) #1 for alternative enforcement business structures.	
	2019	Contract Pilot(s) #2 for adoption of NY Stretch-Energy (IECC2018).	
	2019	Contracts for audience-specific training content and approaches.	
	2019	Issue Solicitation to develop NY Stretch-Energy stretching off IECC2021.	
	2019	Issue Pilot #3 solicitation for pilot communities to test Stretch to Zero code approaches.	

Near-Term Milestones for Fuel Cells

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with accepted open enrollment solicitation applicants as they apply through 2019.	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.	

Near-Term Milestones for Market Rate and Low-Income New Construction

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Issue first competitive solicitation for Buildings of Excellence Competition.	The competitive solicitation is currently in the final stages of development by NYSERDA. Due to other design competitions in the market in Q4 2018, NYSERDA intentionally delayed the Buildings of Excellence Competition until Q1 2019 in order to maximize the potential for success.
	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.
	2018	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 Q1 2019.
	2018	Contract with awardees for Simplified Design and Tools: Model Measure Packages activity.	Task Work Order contract(s) will follow the release of the proposal to the select successful RFQL 3711 vendors.
	2018	Contract with awardees for Net Zero Energy Commercial/Industrial competition.	Award Letters were issued for ten proposed projects on December 10, 2018, following announcement of the Regional Economic Development Council awards. Most awards were made in Q4 2018 and it is expected that all contracts will be finalized in Q1 2019.
	2018	Issue competitive RFP for Simplified Design and Tools: Online Platform development.	The program expects to release a solicitation or proposal (if applicable) to vendors to develop the online platform in Q3 2019.

Milestones for Market Rate and Low-Income New Construction Continued

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract with awardees for Simplified Design and Tools: Online Platform development.	Task Work Order contract(s) will follow the release of the mini-bid to the select successful RFQL 3711 vendors.
	2018	Issue mini-bid for technical reviewers through existing NYSEDA umbrella contracts to begin performance analysis to assess project performance.	Contracts with vendors will follow the solicitation.
	2018	Contract with technical reviewers for Performance Analysis to assess project performance.	NYSEDA is evaluating timing of this analysis based on project complete estimates and expects that a proposal to will be released in Q2 2019.
	2018	Issue solicitation for Simplified Design and Tools: Integrated design practices advisor for first-time developers.	<p>The solicitation will be released in Q1 2019. Primary Energy Consultants can now apply to NYSEDA to be eligible to offer Project Mentoring Services to Raters, Builders and Developers. 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>NYSEDA'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 has received two applications in Q4 2018, which are currently being evaluated for eligibility.</p>
	2018	Contract with awardees for Simplified Design and Tools: Integrated design practices advisor for first-time developers.	<p>The contractor will enter into contract with NYSEDA, or modify their existing contract with NYSEDA, 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 NYSEDA'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 the first program awardees in Q1 2019.</p>
	2019	Issue solicitation for Commercial Pilot Incentive Program.	NYSEDA expects to combine this opportunity into the Net Zero Energy Commercial/Industrial Competition program through a modification to the investment plan.
	2019	Contract with awardees for Commercial Pilot Incentive Program.	
	2019	Issue second competitive solicitation for Buildings of Excellence Competition.	
	2019	Contract with awardees for second round of Buildings of Excellence Competition.	
	2019	Issue second Solicitation for Net Zero Energy Commercial/Industrial Competition.	

Milestones for Market Rate and Low-Income New Construction Continued

	2019	Contract with awardees for second Net Zero Energy Commercial/Industrial Competition.	
	2019	Contract with awardees for third round of Buildings of Excellence Competition.	

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.	Development is underway and on track for completion in Q1 2019. Pilot contracting and participant selection process work extended the timeline into Q1 2019.
✓	2018	Deploy new content on NYSERDA website.	As of December 12, 2018, all content has been deployed
	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 is underway; solicitation and contract work are also underway.
	2018	Implement initial pilot to embed home energy ratings into real estate transactions.	
	2018	Implement initial pilot for leveraging relationships that upstream market actors have with contractors.	Early planning work has begun, and planning activities continue. Planning is expected to be completed in Q1 2019 to support execution beginning in Q2 2019.
	2019	Implement initial pilot for providing energy efficiency information to consumers from home improvement retailers and their contractor network.	

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 Q1 2019.
	2017	Enter into contracts for projects awarded under the targeted competitive solicitation #2.	
	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.
	2018	Enter into contracts for projects awarded under the broad competitive solicitation #3.	PON 3770 is closed and contracting is in process. Two projects have been contracted to date with a potential for 20-26 more.
	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.	

Near-Term Milestones for High-Performing Grid Continued

	2019	Issue broad competitive solicitation #5.	Broad solicitation is being developed for a Q1 2019 release.
	2019	Enter into contracts for projects awarded under the broad competitive solicitation #5.	

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.	Completed three qualification lots with record composition yield of ~65% and delivered lots to General Electric for AEC-Q101 reliability testing.
	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 to 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.
	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.
✓	2018	Awards from second solicitation are contracted.	The only contract from the second solicitation has been fully executed. Program staff is currently in the process of performing additional customer discovery and market validation work in order to determine whether to launch a third solicitation.

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 are scheduled to begin July 19, 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.	
	2019	Award(s) from solicitation for POCC support services contracted.	

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 in Q1/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 Q1 2019.
	2019	Awardees from fourth round selected.	
	2019	Awardees from fourth round contracted.	

Near-Term Milestones for Cleantech Startup Growth Innovation Advisors

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2019	Competitive solicitation launched.	
	2019	Awards from solicitation contracted.	

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.	

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 awards are expected to be contracted in Q1 2019.
	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.
✓	2018	Issue third technology challenge.	The third round of innovation challenges was announced on December 6, 2018.
	2019	Contract projects from third technology challenge.	

Near-Term Milestones for Electric Vehicles Initiative

EV Innovation

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2017	Contract with projects awarded in first competitive solicitation for the development and demonstration of EV-enabling technologies.	Contracts are being negotiated with initial award recipients from PON 3578, Round 1. Through Q4 2018 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 2019.
✓	2018	Issue second competitive solicitation for the development and demonstration of EV-enabling technologies.	Proposals for the second round of PON 3578 were received in September 2018.
	2018	Contract with projects awarded in second competitive solicitation for the development and demonstration of EV-enabling technologies.	Projects will be contracted once awards from the second round of PON 3578 have been made.
	2018	Contract with projects awarded in third competitive solicitation for the development and demonstration of EV-enabling technologies.	The third solicitation is not expected to launch until 2019.
	2018	Fast-charging station network expanded to 30 locations statewide along major interstate corridors.	In June 2018, NYPA announced a major \$40 million direct current fast charge (DCFC) investment to install 200 DCFC stations— 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 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 are expected to be made in Q1 2019 with contracting to follow.
	2018	Issue second competitive solicitation for the development and demonstration of public transportation technologies.	The second solicitation is expected to be released in 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 in 2019.
	2019	Contract with projects awarded in second competitive solicitation for the development and demonstration of public transportation technologies.	
	2019	Issue third competitive solicitation for the development and demonstration of public transportation technologies.	

Near-Term Milestones for Energy Related Environmental Research

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Solicitations issued for research projects consistent with the research plan.	PON 3921, a Metocean solicitation, was released July 31, 2018. A second solicitation under PON 3921, focused on Energy-Related Air Quality Health Effects Research, was released on October 10, 2018.
✓	2018	Projects contracted from solicitations.	Contracting for the Metocean solicitation is complete. Contracting for the Energy-Related Air Quality Health Effects Research solicitation will occur in Q2 2019.
✓	2018	Outreach, technology transfer, and briefings to share research findings.	Outreach supported with CEF and other funding sources for 2018 is complete. Dissemination of research findings is ongoing via workshops, briefings and similar.
	2019	Solicitations issued for research projects consistent with the research plan.	
	2019	Projects contracted from solicitations.	
	2019	Outreach, technology transfer, and briefings to share research findings.	

Near-Term Milestones for Energy Storage Technology and Product Development

Complete ✓	Time Frame	Milestone	Explanation of Progress
	2018	Contract projects from second competitive solicitation.	Eight projects have been selected and contracting is in process.
✓	2018	Review portfolio of activities, solicit market input, and reassess technology challenge areas and targets.	Learning from first four rounds is being used to design next solicitation targeted for Q1 2019.
✓	2018	Issue third competitive solicitation.	Solicitation issued.
	2019	Contract projects from third competitive solicitation.	Two projects have been selected and contracting is in process.
	2019	Review portfolio of activities, solicit market input, and reassess technology challenge areas and targets.	
✓	2019	Issue fourth competitive solicitation.	Solicitation issued.

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

Complete ✓	Time Frame	Milestone	Explanation of Progress
✓	2018	Approval of Consortium bylaws, governance procedures, membership procedures, and operating procedures by Consortium Board of Directors (Board) and DOE.	Amendments to the Consortium bylaws were approved by the Board of Directors on October 18, 2018. The Bylaws include Consortium governance, membership and operating procedures. Operating procedures are expected to be revised and expanded following the hiring of a Consortium Executive Director in Q1 2019.
✓	2018	Consortium kickoff meeting held	An informal gathering of Consortium board members and program staff was held on August 27, 2018 in New York City to kick off the Consortium. Ad hoc working groups were formed at this kickoff meeting to begin work on various procedures documents necessary to achieve future milestones.
✓	2018	Contract establishing Consortium fully executed with DOE.	The Collaborative Award with the Department of Energy was executed in October 2018.
✓	2018	Release of initial R&D priorities.	The initial Research and Development Roadmap prioritizing technical research and development efforts has been completed and was approved by the Consortium Board of Directors on October 18, 2018. The Roadmap was published in November 2018.
✓	2018	Consortium staff and membership structure approved by Consortium Board of Directors.	Initial staff and membership structures were approved by the Consortium Board of Directors on October 18, 2018. The staff structure may be revised and expanded following hiring of a Consortium Executive Director in 1Q 2019.

Milestones for National Offshore Wind Research and Development Consortium continued

Complete	Time Frame	Milestone	Explanation of Progress
	2018	Intellectual property management plan approved by Board of Directors and DOE.	A draft Intellectual Property Management Plan has been reviewed by the Department of Energy counsel, NYSERDA internal and external counsel, the Consortium technical staff, and key members of the Consortium's Research and Development Advisory Group. Board of Directors and DOE approval of the Intellectual Property Management Plan is scheduled for January 2019.
	2019	Consortium communication and outreach strategy approved by Consortium CEO.	
	2019	Consortium website launched.	
	2019	Project financial, intellectual property, and contractual templates, terms and conditions, guidelines and policies approved by the Consortium Board of Directors.	
	2019	Collaboration agreement and standard project terms and conditions with each national research and test facility partner approved by Consortium legal staff and CEO.	
	2019	U.S. manufacturing and data management plans approved by Board of Directors and DOE.	
	2019	Investor and public sponsor outreach strategies approved by Board of Directors.	
	2019	Competitive solicitation procedures and processes, templates, scoring guidelines and mechanisms approved by the Consortium Board of Directors.	
	2019	Issue competitive solicitations for initial R&D priorities.	
	2019	Contract projects selected through initial solicitations.	
	2019	Update R&D priorities.	
	2019	Revise competitive solicitations to align with updated R&D priorities.	

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 NYSERDA and DPS. 2018. "New Efficiency: New York". NYSERDA. <https://www.nysERDA.ny.gov/About/Publications/New-Efficiency>.
- 4 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](https://www.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).
- 5 The 88 million MWh renewable energy goal is not shown in Figure 2 as it is mainly supported by NY-Sun.
- 6 NYSERDA's electricity emission reduction factor of 1,160 pounds CO₂e/MWh is derived using the marginal emission-rate analysis for CO₂ from "Appendix: The Benefits and Costs of Net Energy Metering in New York" Figure 28 and applying a line loss factor of 7.2%. <http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=49636&MNO=15-E-0703>
- 7 Customer Bill Savings are calculated as direct energy bill savings realized by customers participating in NYSERDA's programs.
- 8 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 \$37.5 million or 35% of the total approved budget to date, would be included with total NYSERDA commitments.
- 9 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 \$4,159,592 or 68% of the total approved budget to date, would be included with total NYSERDA commitments.
- 10 If solicitations with upcoming due dates were factored into the total NYSERDA commitments in the Market Development Initiative Research and Spending table, an additional \$15,831,854 or 29% of the total approved budget to date, would be included with total NYSERDA commitments.
- 11 The Market Characterization and Design Chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 12 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 \$17,493,252 or 28% of the total approved budget to date, would be included with total NYSERDA commitments.
- 13 The Market Characterization and Design Chapter line item includes funds to support overarching, non-initiative-specific evaluation studies.
- 14 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.

To learn more about NYSERDA's programs and funding opportunities, visit nyserda.ny.gov or follow us on Twitter, Facebook, YouTube, or Instagram.

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