



**NYSERDA**

# **Clean Energy Fund**

## **Informational Webinar 1: Market Development**

**July 15, 2015**

# Today's Objectives

## Objectives:

- Provide stakeholders with a summary of the approach NYSERDA has proposed to employ under the Clean Energy Fund (CEF)
- Provide an opportunity for stakeholders to ask questions and receive answers

## Key Dates:

- Week of July 20, 2015: NYSERDA posts a summary of frequently asked questions to its website and files with the Public Service Commission (PSC)
- August 14, 2015: Initial comments due
- August 28, 2015: Reply comments due
- Order anticipated late-2015

# Agenda

- Overall Budget and Benefits
  - Funding Authorization, Budget and Collections
  - Bill-As-You-Go Approach
  - Administration and Evaluation Costs
  - Benefits
  - Investment Plans
  - Fuel Neutrality
- Questions
- Market Development Initiatives and Initial Budgets
  - Commercial
  - Agriculture
  - Residential
  - New Construction
  - Industrial
  - Multifamily
  - Low-to-Moderate Income
  - Codes
- Questions
- Market Development Initiatives and Initial Budgets (Con't)
  - Energy Storage
  - Communities
  - On-Site Power Production
  - Workforce Development
  - Renewable Thermal
  - Large-Scale Renewables
  - Products and Integrated Systems
- Questions

# Pillars of Reforming the Energy Vision

**Reforming the Energy Vision (REV)**—New York’s strategy to enable self-sustaining, clean-energy markets supporting a cleaner, more resilient, and affordable energy system

- 1 Groundbreaking Regulatory Reform**  
REV Regulatory Proceeding
- 2 Evolution of State Programs**  
Clean Energy Fund: NY-Sun, NY Green Bank  
NY Prize
- 3 Leading by Example**  
Using the State’s Energy Assets

# Overall Budget and Benefits

# Budget Overview

- Proposed 10-year budget to provide stability and a consistent signal to the marketplace
- Will facilitate the realization of the State's desired long-term outcomes of market transformation, private capital leverage, and greenhouse gas (GHG) emissions reductions
- Provides an immediate reduction in ratepayer collections, declining annually and resulting in \$1.5B in reduced collections from 2016-2025
- Substantially reduces cash balances in three years
- Requests authorization to obtain an external borrowing facility for NY Green Bank
  - Provides liquidity and certainty of projected steady state of \$200M/yr capital commitment schedule
  - Removes constraints on total CEF collections schedule

# CEF Funding Authorization

(\$ millions)

Funding Authorization (2016-2025)	
Market Development	\$2,713.4
Innovation and Research	716.6
2016 Main Tier Solicitation	<u>150.0</u>
Subtotal	<u>3,580.0</u>
NY-Sun	960.6
NYGB	<u>781.5</u>
Total	\$5,322.1

Funding Breakdown	
Incremental collections	\$3,909.3
RGGI	250.0
Repurposed funds and interest	
SBC	85.8
EEPS	125.7
RPS	<u>844.4</u>
	<u>1,162.5</u>
Total	\$5,322.1

# CEF Budget Allocation

	2016	2017	2018
<b>Market Development</b>			
Commercial	\$66.0M	\$49.3M	\$32.0M
Industrial	\$59.8M	\$26.0M	\$18.1M
Agriculture	\$6.2M	\$6.8M	\$4.2M
Multifamily	\$8.3M	\$8.0M	\$5.8M
Residential	\$17.4M	\$17.8M	\$16.7M
Low-Moderate Income	\$75.5M	\$78.5M	\$80.5M
New Construction	\$35.3M	\$29.7M	\$24.8M
Codes	\$4.0M	\$4.0M	\$5.0M
Energy Storage	\$6.0M	\$8.0M	\$8.0M
On-Site Power	\$41.5M	\$27.0M	\$23.0M
Renewable Thermal	\$5.0M	\$10.0M	\$14.0M
Products	\$5.0M	\$6.0M	\$7.0M
Communities	\$7.0M	\$8.0M	\$8.0M
Workforce Development	\$4.0M	\$4.0M	\$4.0M
Large-Scale Renewables	\$3.0M	\$4.0M	\$4.0M
Market Development Evaluation	\$12.6M	\$11.2M	\$10.2M
<b>Total Market Development</b>	<b>\$356.6M</b>	<b>\$298.2M</b>	<b>\$ 265.2M</b>

Note: Totals may not sum exactly due to rounding.

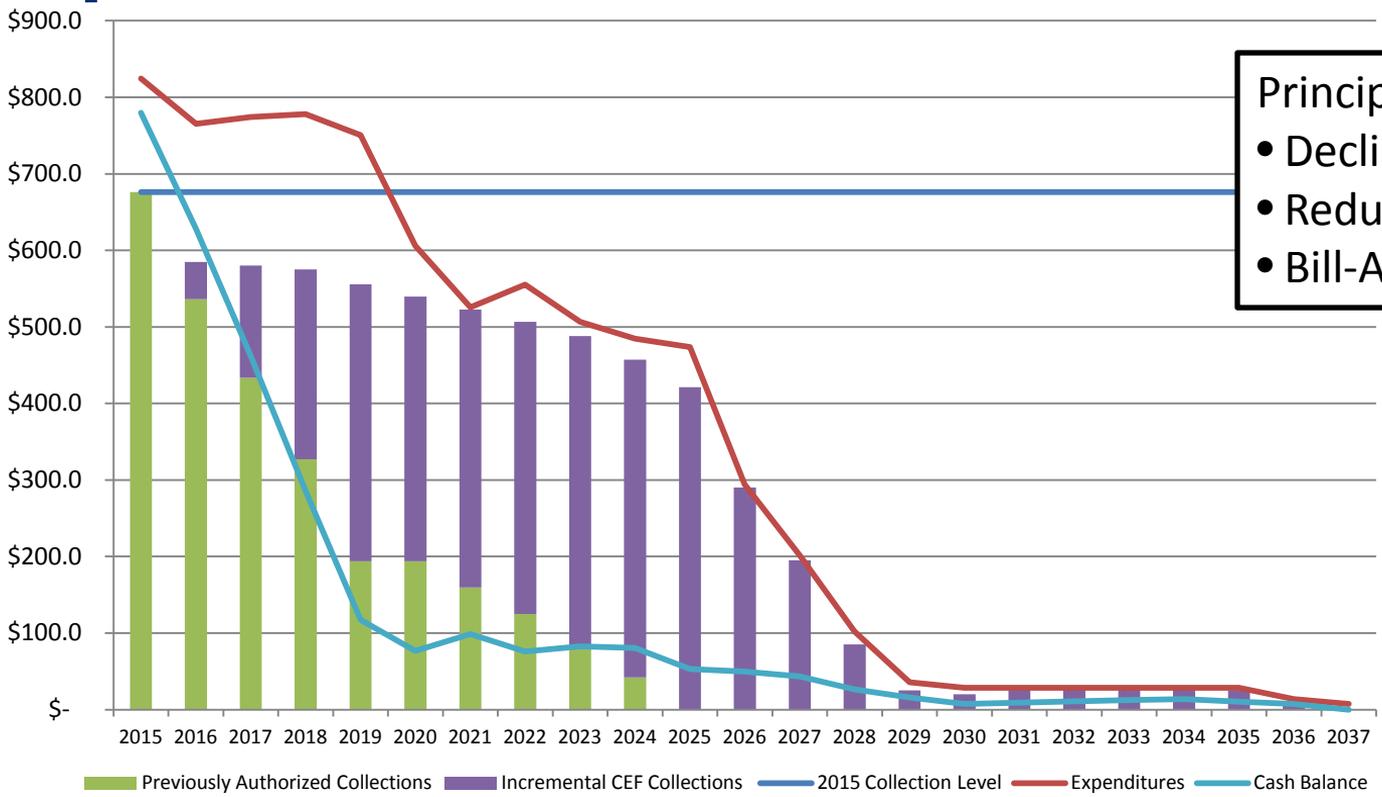


# CEF Budget Allocation

	2016	2017	2018
<b>Innovation and Research</b>			
Energy-Related Environmental Research	\$4.0M	\$4.0M	\$4.0M
Smart Grid	\$12.0M	\$13.1M	\$15.1M
Renewables and DERs Integration	\$18.9M	\$14.5M	\$14.6M
Building Innovations	\$9.7M	\$13.6M	\$12.7M
Clean Transportation	\$8.7M	\$8.5M	\$7.5M
Innovation Capacity and Business Development	\$10.7M	\$17.2M	\$17.0M
Innovation and Research Evaluation	\$2.4M	\$2.8M	\$2.8M
<b>Total Innovation and Research</b>	<b>\$66.4M</b>	<b>\$73.8M</b>	<b>\$73.8M</b>
Main Tier 2016 Solicitation	\$150.0M	-	-
<b>Grand Total</b>	<b>\$573.0M</b>	<b>\$372.0M</b>	<b>\$339.0M</b>

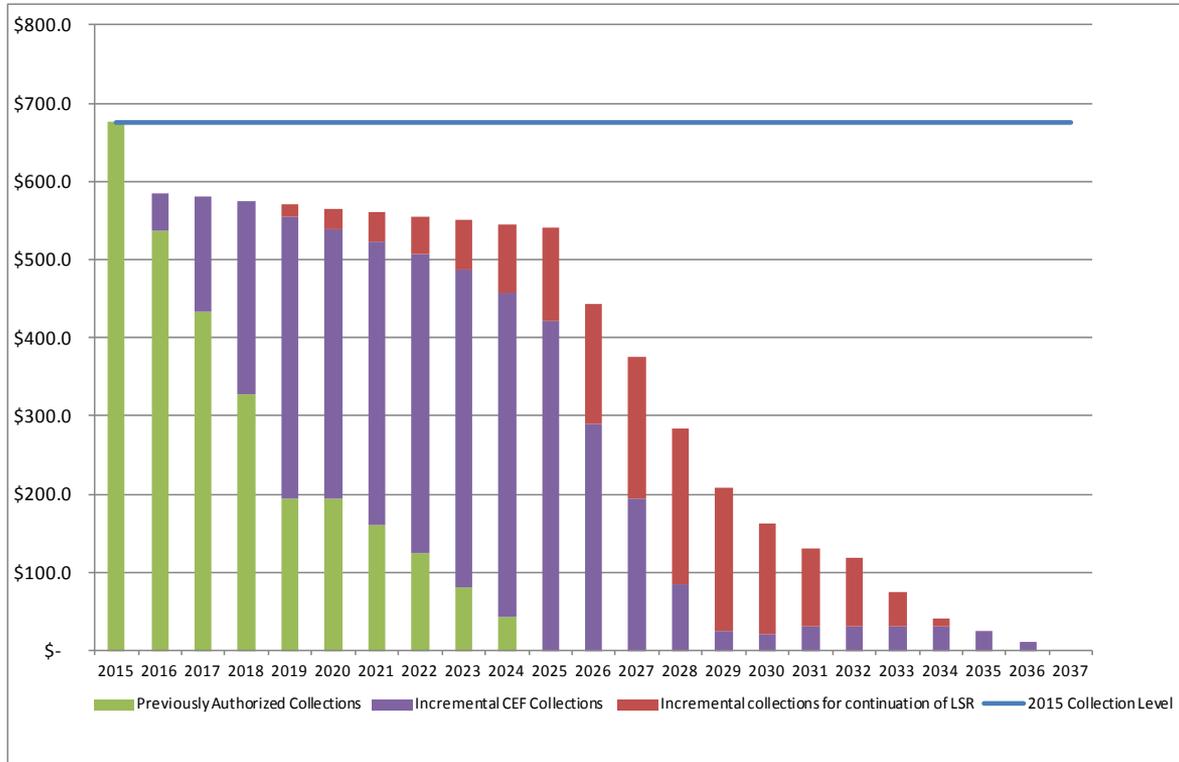
Note: Totals may not sum exactly due to rounding.

# Proposed CEF Collections



- Principles:**
- Declining collections
  - Reduce cash balances
  - Bill-As-You-Go

# Proposed CEF Collections + LSR Funding



Proposed CEF collections plus estimated funding to support a Large-Scale Renewables (LSR) mechanism, if authorized, would still support an annual decrease in total collections

# Bill-As-You-Go Approach

- Would minimize accumulation of unexpended balances while maintaining sufficient funding to meet its projected near-term expenditures
- Mechanics:
  - NYSERDA would receive an initial payment from utilities of 25% of the first year's authorized collections
  - At the end of each quarter, NYSERDA would submit reimbursement requests to each utility, based on actual expenditures realized

# Administration and Evaluation Costs

- Maintain current administrative cost cap of 8% of total authorized funds
- Set budget for evaluation activities which is less than the current budget of 5% of total authorized funds
- Maintain coverage of a proportionate share of the annual New York State Cost Recovery Fee

# Benefits

- Manage the portfolios to advance four primary outcomes:
  - GHG emissions reductions
  - Customer bill savings
  - Energy efficiency and clean energy generation
  - Mobilization of private sector capital
- Longer-range estimates will be done on a lifetime basis to capture the full benefit of the investment
- Incremental annual benefits provided in three-year projections in Investment Plans

# Benefits

Portfolio	Estimated 10-Year CEF Lifetime Benefits in Millions					Leverage Ratio
	MWh	MMBTU	CO2 (tons)	Bill Savings	Private Investment	
Market Development	137	491	76	\$ 20,412	\$ 8,875	4.23
Innovation and Research	*	*	*	*	\$ 3,265	5.00
NY-Sun	88	NA	28	\$ 12,810	\$ 9,216	9.60
NY Green Bank	*	*	*	*	\$ 8,000	8.00

*\* Energy and other benefits for the Innovation and Research and NYGB portfolios will be measured and tracked over the 10 years of the CEF. The NYGB performance accounting will be separately identified and quantified through the NYGB procedures and business plans.*

- Compared to EEPS, the market-rate sectors, including Commercial, Industrial, Multifamily, and Residential provide:
  - 79% more energy savings
  - 57% more GHG emissions reductions

# Investment Plans

- Annual Investment Plan for the Market Development and Innovation and Research portfolios, identifying:
  - Rolling three-year budget projections and estimate of benefits
  - Initiative details and timeline
  - Performance indicators and results
  - Market intelligence
- Requested flexibility to allocate funds within and across the two portfolios to optimize anticipated benefits and increase market responsiveness
- Continuous initiative improvement of initiatives via Test-Measure-Adjust

# Fuel Neutrality

- Would allow clean energy investments to be made based on overall public benefits without regard for specific fuel type
- Provides:
  - Customer-centric clean energy initiatives
  - Better optimized GHG emissions reductions
  - Benefits on a larger system basis, including:
    - Reduced impacts of systems interruptions
    - Improved resiliency of fuel availability when interruptions become necessary

# Overall Budget and Benefits

**Questions?**

# Market Development Initiatives and Initial Budgets

# Market Development Portfolio

- Facilitate the market for on-site, behind-the-meter clean energy solutions including energy efficiency, distributed generation, renewable thermal, and energy storage, as well as LSR
- Focus on strategies to reduce soft costs and other non-monetary barriers:
  - Provide information, data, and education
  - Offer technical assistance and provide standardized and simple, robust tools
  - Provide quality assurance
  - Pilot, demonstrate, and replicate new technologies and business models
  - Enable aggregation of different customer types to reduce costs through economies of scale
- Maintain incentives to support progress, ramping down as new initiatives gain traction

# Commercial Existing Buildings

## Strategy focuses on:

- Strengthening clean energy partners with technical assistance in the form of standardized practices, tools, and methods
- Piloting and demonstrating the efficacy of new tools and potential business model use cases
- Raising awareness through the promotion of the new tools and methods as well as targeted outreach to building owners and other market actors
- Investing in quality assurance through certification processes and vetting of service providers
- Aggregation of project portfolios and identification of opportunities to spur replication and scale
- Note: Significant support for combined heat and power (CHP) (“On-Site Power”) also relevant to this sector
- Maintain incentives over one to two years to support progress, ramping down as new initiatives gain traction

# Commercial Existing Buildings

Initiative	2016	2017	2018
<u>Real Time Energy Management</u>	Launch Pilots	Continuation of Pilots	Continue Pilots and Publish Case Studies
<u>Standard Tools and Resources Development</u>			
<i>Energy Efficiency Packages</i>	Research, Design Initiate Test	Test, Validate and Refine Packages	Validate and Refine Packages
<i>Remote Auditing and Related Information Assets</i>	Continue Pilots Launched in 2015 and Launch New CEF Pilots	Continuation of Pilots and Issue Case Studies	Evaluate and Refine Pilot Approach, Promote Successes and Sharing Data
<i>Energy Efficiency Payback and Co-Benefits Analysis</i>	Develop and Initiate Data Collection Approaches	Develop and Share Analytical Tools	Share Case Studies and Validate Information
<i>Combined Service and Energy Purchase Packages</i>	Research and Design	Launch Pilots/Seek Proposals	Test Pilots
<i>Financing Standards, Tools, and Protocols</i>	Develop and Initiate Data Collection Approaches	Collect Data and Analyze Tools	Share Case Studies and Validate Information
<i>Other Tools and Resources</i>	Research and Design	Launch Pilots or Seek Proposals	Test Pilots

# Commercial Existing Buildings

Initiative	2016	2017	2018
<u>Soft Cost Reduction Efforts</u>			
<i>Expanding Access to Data and Information</i>	Research and Design	Launch Pilots/Seek Proposals	Test Pilots
<i>Skills Development</i>	Research and Design	Launch Pilots/Seek Proposals	Test Pilots
<i>Referral Services for Demand Generation</i>	Launch	Continue	Continue
<u>Strengthening Clean Energy Service Companies</u>			
<i>Performance Contracting Model Expansion</i>	Launch Pilots	Continuation of Pilots	Continuation of Pilots and Publish Case Studies

# Commercial Existing Buildings

Initiative	2016	2017	2018
<u>Commercial Real Estate Tenant Efficiency Initiatives</u>	Continue NRDC Pilot and Initiate New CEF Pilots	Continue Piloting and Testing Models; Publish Information	Continue Piloting and Testing Models; Publish Information
<u>Aggregation and Replication Strategies</u>			
<i>National and Regional Retail Sector</i>	Continuation of Pilots Launched in ETAC in 2015 and Launch New CEF Pilots	Continuation of Pilots and Issue Case Studies	Evaluate and Refine Pilot Approach; Promote Successes; Share Data
<i>Colleges and Universities</i>	Continuation of Pilots Strategies Launched in 2015	Continuation of Pilots and Issue Case Studies	Evaluate and Refine Pilot Approach, Promote Successes and Sharing Data

# Commercial Existing Buildings

Initiative	2016	2017	2018
<u>Current Programs</u>			
<i>Incentives for pre-qualified measures</i>	Conclude		
<i>Existing Facilities, Flex-Tech and Green Jobs Green NY small commercial audit programs</i>	Continue with Modifications	Continue with Modifications	Conclude
<i>Demand Management Program with Con-Ed</i>	Conclude		

# Industrial

## Strategy focuses on:

- Strengthening clean energy partners by providing technical assistance, training, and matchmaking functions
- Developing common toolkits and best practices to advancing technologies
- Piloting and demonstrating the use of new clean energy business processes and additional clean energy capacity resources
- Quality assurance
- Prepare for the shift to self-direct starting in 2017
- Maintain incentives over three years to support progress, ramping down as new initiatives gain traction

# Industrial

Initiative	2016	2017	2018
<u>Piloting and Demonstrating New Business Models and Processes</u>			
<i>Strategic Energy Management</i>	Launch Pilot	Complete Pilot	Develop and Roll out Services and Tools (incl. Web-Based)
<i>On-Site Energy Management and Engineer on Demand Resources</i>	Launch Pilot	Complete Pilot	Training and Data to Market

# Industrial

Initiative	2016	2017	2018
<u>Strengthening Clean Energy Partners through Technical Assistance and Standardized Tools</u>			
<i>Education, Training, and Technical Assistance for Advanced Science and Technology</i>	Develop and Hold Forums; Data to Market	Develop and Hold Forums; Data to Market	Develop and Hold Forums; Data to Market
<i>Education, Training, and Technical Assistance to Spur Clean Energy at Data Centers</i>	Develop and Launch Training	Pilot Completion	Data to Market
<i>Providing Standardized Tools to Reduce Technical Risk of Energy Efficiency</i>		Strategy Development	Data to Market
<i>Providing On-Demand Technical Assistance</i>	Research and Design	Launch Program	Data to Market

# Industrial

Initiative	2016	2017	2018
<u>Quality Assurance</u>			
<i>Credible M&amp;V Services</i>	Launch Program	Data to Market	Data to Market
<u>Current Programs</u>			
<i>Industrial and Process Efficiency Program</i>	Continue with Modifications and Heightened Focus on Process Efficiency	Modify to Address Gaps in Self-Direct	Continue

# Agriculture

## Strategy focuses on:

- Strengthening farm partners through technical assistance, education and outreach to farmers about energy and other GHG-mitigating best management practices
- Piloting and demonstrating the use of new technologies by evaluating compatibility and benefits of both existing and promising new farm systems and efficient controlled agriculture technologies
- Developing simple and robust tools and resources to assist with on-farm operations
- Exploring the potential of aggregating agriculturally-based technology solutions for matchmaking purposes between suppliers and investors
- Note: Significant support for anaerobic digester gas-to-electricity (ADG) (“On-Site Power”) also relevant to this sector
- Maintain incentives over three years to support progress, ramping down as new initiatives gain traction

# Agriculture

Initiative	2016	2017	2018
<u>Strengthening Farm Partners with Technical Assistance, Education, and Outreach</u>			
<i>Technical Assistance for Farm Management Best Practices</i>	Develop and Hold Forums; Data to Market	Develop and Hold Forums; Data to Market	Develop and Hold Forums; Data to Market
<i>Technical Assistance for Controlled Environmental Agriculture</i>			Develop and Hold Forums; Data to Market
<u>Development of Standardized Tools and Resources</u>			
<i>On-Site Farm Management Tool</i>	Research and Design	Develop Tool	Launch Tool

# Agriculture

Initiative	2016	2017	2018
<u>Piloting and Demonstrating New Technologies</u>			
<i>Technology Advancement Pilots</i>	Research and Design	Launch Pilot	Continue Development
<u>Current Programs</u>			
<i>Agriculture Energy Efficiency Program</i>	Continue incentives, Modify Focus to Farm Audits and Technical Support	Continue incentives, refine technical support	Conclude incentives, refine, modify other strategies as needed

# Multifamily

## Strategy focuses on:

- Information, awareness, and demand
- Standardized and simple tools and resources
- Strengthening clean energy partners
- Encouraging mid-market engagement and aggregation
- Maintain incentives over three years to support progress, ramping down as new initiatives gain traction

# Multifamily

<b>Initiative</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<u>Information, Awareness, and Demand</u>			
<i>Communications Toolkit</i>	Research and Design	Design, Launch pilots; Design Final Toolkit	Roll out
<i>Building Energy Performance Labeling</i>	Research; Assemble National Working Group	Design, Launch pilots; Complete Label	Roll out
<u>Standardized, Simple Tools and Resources</u>			
<i>Standardized Retrofit Packages</i>	Launch Pilot	Complete Pilots; Assess Effectiveness	
<i>Energy Efficiency Retrofit Calculators</i>	Conduct Research and Design	Support Development of Calculators	Continue Development
<i>Zoning and Permitting Tools</i>	Conduct Research and Design	Support Development of Tools	Continue Development
<i>Financing and Physical Needs Assessment Tools</i>	Conduct Research and Design	Support Development of Tools	Continue Development

# Multifamily

<b>Initiative</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<u>Strengthening Clean Energy Partners</u>			
<i>Network of Qualified Clean Energy Partners</i>	Enlist Partners in initial Categories	Continue Development and Expand	Continue Development and Expand
<i>Performance Validation and Quality Assurance</i>	Design and Test Tools and Processes, e.g. IPC, revised QC processes through MPP	Continue Development	Promote Partner Performance Based on QC/QA Results
<i>Support of New Business Models and Services</i>	Research and Design	Assess Effectiveness, Refine	Encourage New models As Market Evolves
<u>Aggregation</u>			
<i>Mid-Market Engagement</i>	Implement Pilots	Complete Pilots; Assess Effectiveness	Launch Statewide Aggregation Initiative

# Multifamily

Initiative	2016	2017	2018
<u>Current Programs</u>			
<i>Multifamily Performance Program</i>	Modify - Eliminate 15% Threshold; Revise Incentive Schedule; Expand project types, including tenant improvements	Refine and Continue	Conclude incentives, refine, modify other strategies as needed
<i>GJGNY Financing</i>	Expand Solutions, Refine and Continue	Expand Solutions, Refine and Continue	Expand Solutions, Refine and Continue
<i>Advanced Submetering Program</i>	Conclude		

# Residential

## Strategy focuses on:

- Information, awareness, and demand; enhancing consumer confidence and establishing value propositions
- Development of standardized tools and resources
- Strengthening clean energy partners by providing technical assistance and training to make use of new tools and skills
- Piloting and demonstrating emerging and underutilized technologies that improve building performance to drive widespread adoption

# Residential

Initiative	2016	2017	2018
<u>Information, Awareness, and Demand</u>			
<i>Incorporating the Value of Energy Efficiency into Homes</i>	Launch Pilots	Continue/Add Pilots; Data to Market	Continue/Add Pilots; Data to Market
<i>No and Low-cost Energy Saving Tips</i>	Launch	Continue	Continue
<i>Public Forums to Share Best Practices and Home Energy Improvement Data</i>		Launch	Continue
<i>On-line Communications Platform</i>	Research and Design	Pilot	Transition to Market

# Residential

Initiative	2016	2017	2018
<u>Development of Standardized Tools and Resources</u>			
<i>Product, Data and Building Performance Standards</i>	Continue Development and Delivery to Market	Continue Development and Delivery to Market	Continue Development and Delivery to Market
<i>Building Energy Efficiency Packages</i>	Continue/Add Pilots	Continue/Add Pilots; Data to Market	Continue/Add Pilots; Data to Market
<i>Increase Access to Efficiency Financing Products</i>	Continue current	Continue	Continue

# Residential

Initiative	2016	2017	2018
<u>Strengthening Clean Energy Partners</u>			
<i>Supporting Home Performance with ENERGY STAR Contractor Network</i>	Launch Pilots	Continue/Add Pilots; Data to Market	Continue/Add Pilots; Data to Market
<i>Leveraging Partnerships</i>	Continue current	Continue	Continue
<u>Current Programs</u>			
<i>Subsidized audits, advertising, and consumer and contractor incentives</i>	Wind down Consumer Incentives, Modify Contractor Incentives	Wind down market rate Contractor Incentives	

# Low-to-Moderate Income (LMI)

## Strategy focuses on:

- Enhancing statewide coordination on LMI-specific initiatives and opportunities to expanding the reach of LMI initiatives and households served
- Leveraging information and data to conduct targeted outreach
- Strengthening clean energy partners in the LMI sector
- Aggregating and simplifying access to programs with new tools and resources
- Piloting and demonstrating the efficacy of clean energy and affordability solutions tailored to address the particular needs of LMI customers and communities

# Low-to-Moderate Income

<b>Initiative</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<u>Financial Support</u>	Continue current	Continue	Continue
<u>Increased Coordination</u>	Continue current	Continue	Continue
<u>Development of Tools and Resources</u>			
<i>Technical Assistance and Quality Assurance</i>	Continue current	Continue	Continue
<i>Energy Efficiency Clearinghouse for Multifamily Affordable Housing</i>	Research and Design	Launch Pilots; Assess Effectiveness	Complete Pilots; Assess; Roll Out
<i>Green Physical Needs Assessment</i>	Research and Design; Launch Pilots	Launch Pilots; Assess Effectiveness	Complete Pilots; Assess; Roll Out

# Low-to-Moderate Income

Initiative	2016	2017	2018
<u>Pilots and Demonstration Projects</u>			
<i>Demand Aggregation</i>	Research and Design	Launch Pilots; Assess Effectiveness	Complete Pilots; Assess; Roll Out
<i>Demonstrations to Increase Energy Affordability</i>	Research and Design; Launch Pilots	Launch Pilots; Assess Effectiveness	Complete Pilots; Assess; Roll Out
<u>Information, Awareness, and Demand</u>			
<i>Education and Outreach Efforts</i>	Continue current	Continue	Continue
<i>Leveraging Community-Based Organizations</i>	Continue current	Continue	Continue
<u>Strengthening Clean Energy Partners</u>	Continue current	Continue	Continue

# Low-to-Moderate Income

Initiative	2016	2017	2018
<u>LMI Solar</u>	Program rollout/pilot rounds completed	Continue	Continue
<u>Current Programs</u>			
<i>GJGNY</i>	Continue current	Continue	Continue
<i>Assisted Home Performance with Energy Star</i>	Continue/Modified-Combine With EmPower	Continue/Modified-Combine With EmPower	Continue/Modified-Combine With EmPower
<i>EmPower NY programs</i>	Continue/Modified - Combine with AHPwES	Continue/Modified-Combine with AHPwES	Continue/Modified-Combine with AHPwES

# New Construction

## Strategy focuses on:

- Increasing information on, awareness of, and demand for deep energy savings and zero net energy construction
- Strengthening the capacity of clean energy partners in the building design and construction sectors
- Providing technical assistance and developing standardized tools, templates, practices, and methods for practitioners; ensuring quality assurance through performance validation and M & V
- Piloting and demonstrating deep-energy savings methods to encourage replication

# New Construction

<b>Initiative</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<u>Information, Awareness, and Demand</u>			
<i>Zero Net Energy Road Map</i>	Research and Design	Launch	Adjust
<i>Information Resources</i>	Launch Champions Networks	Continue and Expand	Continue
<u>Strengthening Capacity of Clean Energy Partners</u>			
<i>Information, Tools and Technical Assistance for the Design and Construction Communities</i>	Launch Annual Forums	Continue Annual Forums and Launch Technical Assistance and Tool Development	Continue
<i>Leveraging Partnerships to Increase Scale</i>	Launch new strategic partnership opportunities	Continue	Continue
<u>Pilot and Demonstration Projects</u>			
<i>Deep Energy and Zero Net Energy New Construction Pilots</i>	Research and Design	Continue Research/Design; Launch Pilots	Continue

# Codes

## Strategy focuses on:

- Strengthening partnerships
- Supporting code-related technical assistance, training and tools
- Leveraging information, data, and awareness

# Codes

<b>Initiative</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<u>Strengthening Organizational Partnerships</u>			
<i>Community of Practice Support</i>	Ongoing; Research/Design Successor Approaches	Disseminate Information	Continue
<i>Municipal Partnership Support</i>	Ongoing; Research/Design Successor Approaches	Continue	Continue
<u>Model Codes and Code-Related Technical Assistance, Training, and Tools</u>			
<i>Code Advancement and Development of a Model NY Stretch Code</i>	Research and Design	Support Model Code Proposals	Continue
<i>Developing Training and Tools to Support Code Practitioners</i>	Launch pilots and Launch Next Round of Code Training Development	Expand	Expand
<u>Information and Awareness</u>			
<i>Evaluation of Code Compliance, Construction Activity, and Code-related trends</i>	Ongoing; Research/Design Successor Approaches	Continue	Continue

# Market Development

**Questions?**

# Energy Storage

## Strategy focuses on:

- Supporting pilot and demonstration projects of advanced storage technologies
- Developing standardized processes and simple tools to support storage implementation and reduce soft costs
- Quality assurance through information and data sharing to develop use cases and best practices

# Energy Storage

Initiative	2016	2017	2018
<u>Pilot and Demonstration Projects</u>			
<i>Quantifying and Monetizing Value of Storage Projects</i>	Launch	Data to Market	Data to Market
<u>Standardized Processes and Simple Tools</u>			
<i>Storage Soft Cost Reduction Strategy via Standardized Interconnection and Tools Development</i>	Launch	Data to Market	Data to Market
<u>Quality Assurance</u>			
<i>Catalogue of Product Offerings and Suggested Use Cases</i>	Launch Pilots	Data to Market	Data to Market
<i>Battery Safety and Performance Program</i>	Launch Pilots	Data to Market	Data to Market

# On-Site Power Production

## Strategy focuses on:

- Accelerate market traction for high potential solutions
- Information, data, and awareness
- Technical assistance and providing simple, robust tools
- Targeted soft cost reduction strategies and aggregation
- Prepare for the shift to stand-by tariffs starting in 2016

# On-Site Power Production

Initiative	2016	2017	2018
<b><u>CHP</u></b>			
<u>Information, Data, Education, and Awareness</u>			
<i>Communications Platforms and Educational Activities</i>	Modify Existing Programs; Merge Current CHP programs into "Single Interface"	Launch "CHP Interconnection Forum", Mapping to Target Highest Potential Locations	Continue
<i>Simplifying the CHP Purchase</i>	Continue, Including Bridge Incentives	Launch Guidance Documents	Continue

# On-Site Power Production

Initiative	2016	2017	2018
<b><u>CHP</u></b>			
<u>Technical Assistance and Tools Development</u>			
<i>Building Capacity of Technical Assistance Resources</i>	Launch support for Utility-Embedded DG/CHP Ombudsmen	Launch Support for CHP O&M Business Model; Launch Support "DG Soft Cost Team"	Continue Development
<i>Tools and Methods to Improve the CHP Value Proposition</i>	Continue (promote value acceptance, matchmaking, soft-cost analytics)	Continue	Continue
<i>Tools and Methods to Explore Hybrid Solutions</i>		Launch exploration of "hybrid DG solutions"	Continue Development

# On-Site Power Production

Initiative	2016	2017	2018
<b><u>Emerging On-site Power Technologies (ADG, Fuel Cells and Small Wind)</u></b>			
<u>Information and Awareness Building</u>			
<i>Wastewater Treatment Facilities Outreach and Match-making</i>	Continue current	Continue	Continue
<i>Anaerobic Digestion Information and Market Studies</i>	Launch Mapping to Target Highest Potential Locations (feedstock, interconnection, etc.)	Continue Development	Continue Development
<u>Pilots and Demonstrations</u>			
<i>Targeting High-value Early Adopter Projects</i>		Pivot from Current "Standard Offer" Incentives to New "Competitive Selection" Incentives. In 2017 pivot Fuel Cells and Small Wind. In 2018 pivot ADG.	

# On-Site Power Production

Initiative	2016	2017	2018
<b><u>Emerging On-site Power Technologies (ADG, Fuel Cells and Small Wind)</u></b>			
<u>Soft Cost Reduction Strategies</u>			
<i>Realizing Reduced Operating Costs and Expanding Revenue Streams</i>	Research and Design Business Model Pilots	Launch Business Model Pilots	Continue Development
<i>New Business Model Development</i>	Continue as is; Research and Design Business Model Pilots	Launch Business Model Pilots	Continue Development
<i>Regulatory Interventions</i>	Continue as is (drive the Clean Energy for Agriculture Task Force, participate in REV proceedings).		
<i>Solar Balance of System Cost Reduction</i>	Continue Program with Significant Revisions (focus on state-wide problems and tools)	Continue Program (test-measure-adjust)	Continue Program (test-measure-adjust)

# On-Site Power Production

Initiative	2016	2017	2018
<b><u>Current Programs</u></b>			
<i>CHP</i>	Modify and Continue Current	Anticipate Stand-By Tariff Resolution; Modify Existing (Glide-Path Reduction of Incentives Within Standard Offer Incentive Program).	
<i>ADG</i>	Continue Current	Continue Current	Pivot from Current "Standard Offer" Incentives to New "Competitive Selection" Incentives
<i>On-site Wind</i>	Continue Current	Pivot from Current "Standard Offer" Incentives to New "Competitive Selection" Incentives	
<i>Fuel Cells</i>	Continue Current	Pivot from Current "Standard Offer" Incentives to New "Competitive Selection" Incentives	

# Renewable Thermal

## Strategy focuses on:

- Increase support for high potential solutions to accelerate market traction
- Strengthening clean energy partners
- Providing guidance and tools designed to simplify processes
- Leveraging educational and outreach to raise stakeholder awareness and provide market information
- Aggregation
- Quality assurance, via energy monitoring and performance validation

# Renewable Thermal

Initiative	2016	2017	2018
<u>Renewable Heat NY</u>	Continue Program with Refined Incentives; Increase Installer Network	Launch Pilots to Address Financing, Customer Acquisition, and Soft Costs	Continue
<u>Solar Thermal</u>	Expand Incentives to Include Space Heating; Pilot Solarize Models	Launch Pilots to Reduce Customer Acquisition/Soft Costs	Continue
<u>Ground-Source/Air-Source Heat Pumps</u>	Research and Design	Launch	Continue

# Products and Integrated Systems

## Strategy focuses on:

- Target products and technologies that meet criteria of market readiness, impact, and ability to accelerate progress
- Information, awareness, and demand, e.g. via match-making or capacity building functions
- Technical assistance, e.g. through trainings,
- Pilot and demonstration projects

# Products and Integrated Systems

Initiative	2016	2017	2018
<u>Technical Assistance Provision</u>			
<i>Training and Education for Manufacturer and Vendor Sales Staff</i>	Update Curriculum and Continue	Continue	Continue
<u>Information, Awareness and Demand</u>			
<i>Increase Product Availability and Capacity for Aftermarket Products and Services</i>	Continue current	Continue	Continue
<i>Matchmaking</i>	Continue current	Continue	Continue
<i>Serve as a Trusted Information Resource</i>	Continue current	Continue	Continue
<i>Coordinate with Utilities</i>	Continue current	Continue	Continue

# Products and Integrated Systems

Initiative	2016	2017	2018
<u>Pilot and Demonstration Projects</u>			
<i>Prioritizing Underutilized and Emerging Technologies</i>	Research and Design	Launch Pilot	Continue Development
<u>Current Programs</u>			
<i>Product Buy Downs</i>	Conclude		

# Communities

## Strategy focuses on:

- Accelerate effective local energy action
- Leveraging easily accessible information to raise awareness and increase market demand (e.g. through summits)
- Strengthening clean energy partners by providing technical assistance and standardized tools and resources
- Enabling aggregation
- Flexible levels of support for pilot and demonstrations projects

# Communities

Initiative	2016	2017	2018
<u>Leveraging Information, Awareness and Recognition</u>			
<i>On-Line Communications and Resource Platform</i>	Research and Design	Launch Pilot	Continue Development
<i>Community Summits</i>	Initiate	Assess Effectiveness, Refine	Continue Development
<i>Community Recognition and Certification</i>	Initiate	Assess Effectiveness, Refine	Continue Development
<i>Competitions</i>	Research and Design	Launch Pilots	Continue Development
<i>Replication</i>	Research and Design	Research and Design; Launch Initial Replication Toolkits	Ongoing Development; Roll Out

# Communities

Initiative	2016	2017	2018
<u>Technical Assistance, Capacity Building, and Resource Provision</u>			
<i>Empowering Trusted Local Engagement</i>	Initiate	Assess Effectiveness, Refine	Continue Development
<i>Low-to-Moderate Income Engagement</i>	Initiate	Assess Effectiveness, Refine	Continue Development
<i>Building Capacity in the Higher Education Sector</i>	Initiate	Assess Effectiveness, Refine	Continue Development
<i>Funding for Advanced Actions</i>	Research and Design Areas of Focus	Launch Pilot	Continue Development
<u>Aggregation</u>			
<i>Enabling Community Solar and Other Demand Aggregation Activities</i>	Continue current, Adapt to New Models (such as Community DG and CCA)	Continue	Continue

# Workforce Development

## Strategy focuses on:

- Businesses' need for labor and job placement outcomes
- Exploring career pathways opportunities and apprenticeship models, and developing clean energy training curricula
- Targeting training where availability of skilled labor is a constraint to growth in specific clean energy markets
- Providing technical training where new skills are essential to overcoming identified barriers
- Serving as a trusted information source by connecting training organizations with clean energy businesses and equipment manufacturers
- Providing quality assurance by supporting certification initiatives and promoting certified practitioners
- Working with community-based entities to position and prepare New Yorkers for jobs related to clean energy

# Workforce Development

Initiative	2016	2017	2018
<u>Workforce Development</u>	Continue Current with Modifications	Continue	Continue
<u>Technical Training</u>	Continue Current with Focus on Market Gaps	Continue	Continue
<u>Trusted Information Source</u>	Continue Current	Continue	Continue
<u>Current Programs</u>			
Tuition Support	Continue for LMI	Continue for LMI	Continue for LMI
Reimbursements for Certification Exam Fees	Conclude		

# Large-Scale Renewables

## Strategy focuses on:

- Facilitating New York's renewables voluntary market to build demand
- Providing technical and pre-development assistance to reduce soft costs
- Developing appropriate energy market valuation for LSR
- Enabling the development of the next generation of renewable technologies, including offshore wind

**Also CEF provides for an additional \$150M Main Tier solicitation in 2016**

# Initial Budgets

	2016	2017	2018
<b>Market Development</b>			
Commercial	\$66.0M	\$49.3M	\$32.0M
Industrial	\$59.8M	\$26.0M	\$18.1M
Agriculture	\$6.2M	\$6.8M	\$4.2M
Multifamily	\$8.3M	\$8.0M	\$5.8M
Residential	\$17.4M	\$17.8M	\$16.7M
Low-Moderate Income	\$75.5M	\$78.5M	\$80.5M
New Construction	\$35.3M	\$29.7M	\$24.8M
Codes	\$4.0M	\$4.0M	\$5.0M
Energy Storage	\$6.0M	\$8.0M	\$8.0M
On-Site Power	\$41.5M	\$27.0M	\$23.0M
Renewable Thermal	\$5.0M	\$10.0M	\$14.0M
Products	\$5.0M	\$6.0M	\$7.0M
Communities	\$7.0M	\$8.0M	\$8.0M
Workforce Development	\$4.0M	\$4.0M	\$4.0M
Large-Scale Renewables	\$3.0M	\$4.0M	\$4.0M
Market Development Evaluation	\$12.6M	\$11.2M	\$10.2M
<b>Total Market Development</b>	<b>\$356.6M</b>	<b>\$298.2M</b>	<b>\$ 265.2M</b>

Note: Totals may not sum exactly due to rounding.

# Market Development

**Questions?**