

MEETING MATERIALS

February 2, 2021

&

February 3, 2021

Board Meeting – Meeting Matrix

Each meeting:

- Review and approve the Periodic Contracts Reports
- Receive a Report on NY Green Bank Status
- Receive a Report from an Authority Program or Initiative

January Meeting

- Review and approve the next fiscal year budget: from Program Planning Committee and Waste and Facilities Management Committee
- Review and approve RGGI Operating Plan/Amendments
- Review and approve the Strategic Outlook: from Program Planning

April Meeting

- Review and approve the Conflict of Interest Policy: from Governance Committee
- Review the schedule for the Independent Audit of the NYSERDA and NY Green Bank financial statements: from Audit and Finance Committee
- Review and approve
 - Board Member Evaluation Report: from Governance Committee
 - Committee Charter Amendment recommendations: from Committees
- Reappoint Members to Committees – as terms expire

June Meeting

- Review and approve:
 - Annual Financial Reports: from Audit and Finance Committee
 - Annual Investment Report and Guidelines
 - Annual OPEB Trust Investment Report and Policy Statement
 - Annual Independent Audit of NYSERDA and NY Green Bank financial statements
 - Annual Bond Sales Report
 - Appointment of Independent Auditors for next fiscal year: from Audit and Finance Committee
 - Annual Procurement Report and Guidelines
 - Annual Report on Disposition of Real and Personal Property and Review of the Guidelines
 - Real Property Acquisition Guidelines
 - Prompt Pay Annual Report
 - Operations and Accomplishments and Mission Statement and Measurements Annual Report
 - Compensation Schedule: from Governance Committee
 - Code of Conduct

October Meeting

Review as needed:

- Items presented by committees or management for review and approval

Audit and Finance Committee – Meeting Matrix

Review at each meeting:

- Recent Internal Audit Activity, subject to the issuance of audit reports by Internal Audit*

April Meeting

- Review and recommend for approval the Schedule for the Independent Audit of the NYSERDA and Green Bank financial statements
- Review and approve the Annual Internal Audit Report*
- Review and approve the Annual Internal Audit Plan*
- Review and recommend for approval the Committee Charter

June Meeting:

- Review and recommend for approval the Annual Investment Report and Guidelines
- Review and recommend for approval the Annual OPEB Trust Investment Report and Policy Statement
- Review and recommend for approval the Annual Independent Audit of NYSERDA and NY Green Bank financial statements
- Review and recommend for approval the Appointment of Independent Auditors for next fiscal year
- Review and recommend for approval the Annual Bond Sales Report

Review and recommend for approval, as needed:

- Audits by external reviewers including the New York State Comptroller*
- Review and recommend for approval any proposed bond or other debt issuances
- Review and recommend for approval the amendments to the Internal Control Manual

*These items are reviewed and approved solely by the Audit and Finance Committee and are not presented to the full Board

Governance Committee – Meeting Matrix

January Meeting

- Cancelled if no specific agenda items

April Meeting:

- Review results and make recommendations to modifications to the Self-assessment form
- Review and recommend for approval the Authority's Conflict of Interest Policy
- Review and recommend for approval the Committee Charter

June Meeting:

- Review and recommend for approval the Compensation Schedule Review and recommend for approval the Board Member Evaluation Report
- Review and recommend for approval the mission statement
- Review and recommend for approval the code of conduct/ethics

September Meeting:

- Cancelled if no specific agenda items

Review and recommend for approval, as needed:

- Guidance from Authorities Budget Office
- Member Qualifications
- Review and recommend for approval compensation / salary increases for officers
- Review and recommend for approval the NYSERDA Employee Code of Conduct
- Review and recommend for approval any specific language for Compensation, Ethics, and Whistleblower policies as needed

Program Planning Committee – Meeting Matrix

January Meeting:

- Review and recommend for approval the next fiscal year budget
- Review and recommend for approval the Strategic Outlook

April Meeting:

- Review and recommend for approval the Committee Charter

June Meeting:

- Discretionary program review

September Meeting

Review and recommend for approval, as needed:

- Cross State Air Pollution Rule (“CSAPR”, formerly CAIR) Program Plan/Amendments
- Authority programs’ performance metrics – periodic reporting
- New or ongoing program initiatives – periodic presentations

Waste and Facilities Management Committee – Meeting Matrix

Review at each meeting:

- Status of West Valley Nuclear Service Center activities

January Meeting

- Review and recommend for approval the next fiscal year budget

April Meeting:

- Review and recommend for approval the Committee Charter

September Meeting:

Review and recommend for approval, as needed:

- Status of nuclear coordination activities
- STEP-related items



NYSERDA

ANDREW M. CUOMO
Governor

RICHARD L. KAUFFMAN
Chair

DOREEN M. HARRIS
Acting President and CEO

REVISED NOTICE OF MEETING AND AGENDA

January 25, 2021

TO THE GUESTS OF THE PROGRAM PLANNING COMMITTEE:

PLEASE TAKE NOTICE that a meeting of the Program Planning Committee (the 111th meeting) of the New York State Energy Research and Development Authority (“Authority”) will be held by video conference, on Tuesday, February 2, 2021, commencing at 2:00 p.m., for the following purposes:

1. To consider and act upon the Minutes of the one hundred tenth (110th) meeting of the Program Planning Committee held on June 23, 2020.
2. To receive a report and consider and act upon a resolution recommending approval of the strategic plan entitled *Toward A Clean Energy Future - A Strategic Outlook 2021-2024*.
3. To consider and act upon a resolution recommending approval of revisions to the plan entitled *Operating Plan for Investments in New York Under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Program*.
4. To receive a report on the Authority’s CEF Filing.
5. To receive a report from the Treasurer and to consider and act upon a resolution recommending the approval of the Authority’s fiscal year 2021-2022 Budget.
6. To transact such other business as may properly come before the Committee.

As the Authority continues to follow the guidance for addressing the impacts of COVID-19, Members of the public may attend the meeting via the video conference which can be accessed at <https://www.nyserdera.ny.gov/About/Board-Governance/Board-and-Committee-Meetings>.

The Authority will be posting a video and a transcript of the meeting to the web as soon as practicable after the meeting. The video and transcript will be posted at <http://www.nyserdera.ny.gov/About/Board-Governance/Board-and-Committee-Meetings>.

Sara L. LeCain
Secretary to the Committee

New York State Energy Research and Development Authority

Albany
17 Columbia Circle, Albany, NY 12203-6399
(P) 1-866-NYSERDA | (F) 518-862-1091
nyserdera.ny.gov | info@nyserdera.ny.gov

Buffalo
726 Exchange Street
Suite 821
Buffalo, NY
14210-1484
(P) 716-842-1522
(F) 716-842-0156

New York City
1359 Broadway
19th Floor
New York, NY
10018-7842
(P) 212-971-5342
(F) 518-862-1091

**West Valley Site
Management Program**
9030-B Route 219
West Valley, NY
14171-9500
(P) 716-942-9960
(F) 716-942-9961

Toward a Clean Energy Future:

A Strategic Outlook 2021–2024



NEW YORK
STATE OF
OPPORTUNITY.

NYSERDA

Message from Acting President and CEO

Looking back on 2020, it was a year that scarce few of us could have imagined, never mind predicted. In many ways, the world shifted beneath our feet, with a global pandemic disrupting nearly every aspect of our daily lives and forcing us to reconsider many of the things that we had collectively taken for granted. During this time when Americans were focused on sheltering safely from COVID-19, historic demonstrations over racial injustice also roiled the country and our collective conscience. What's more, crises that had heretofore been viewed as long-term issues came into sharp, immediate relief, including the climate crisis—which reared its head with powerful hurricanes, forest fires, floods, and other extreme weather. In climate and beyond, many observers remarked that 2020 should not be viewed as the most extreme year of our lifetimes, but rather the least extreme year for the rest of the 21st Century—a sobering notion.



The convergence of crises in 2020 means the call to act on climate change and accelerate the energy transition has reached new levels of urgency and appreciation.

If nothing else, however, the convergence of crises in 2020 means the call to act on climate change and accelerate the energy transition has reached new levels of urgency and appreciation, demanding a renewed attention on planning and action. We have all now lived through, and continue to experience first-hand, what it means for society to adapt to major disruptive events, and certainly those of us in New York can attest to the difference that capable leadership and informed planning from government can have on our response and its efficacy.

In addition, 2020's converging crises should leave us all with deeper appreciation for the interconnected nature of our systems, institutions, and policy legacies that continue to perpetuate inequitable outcomes for disadvantaged communities and marginalized populations in New York State and beyond.

As Governor Andrew M. Cuomo noted in the early heights of the COVID crisis, health disparities in minority demographic groups mirror the locations of our most polluting infrastructure, which have contributed to chronically higher rates of respiratory illnesses such as asthma—and in many of the same locations that will disproportionately face risks from a changing climate in the years ahead. **We have to learn this lesson and embed its implications into all of our efforts in the future.**

Against this backdrop, I'm proud to introduce a Strategic Outlook for 2021–2024 that places people at the heart of all our efforts across NYSERDA.

In implementing Governor Cuomo's nation leading climate agenda and the Climate Leadership and Community Protection Act (Climate Act), we must do everything we can to drive climate progress that works for the people—all New Yorkers. That means putting a new lens over NYSERDA's existing mission and vision statements and core outcomes to ensure that our objectives across renewable energy, energy efficiency, a clean energy economy, a resilient and distributed energy system, and greenhouse gas reductions are properly in focus with respect to a people-centric orientation.

And, it means undertaking deep-dive examinations of new priorities where tremendous opportunities exist to deliver benefits to all New Yorkers, especially those in historically underserved communities. Specifically, our deep-dive focus areas for the coming three years will span several notable areas of inquiry and action, all of which revolve around improving lives for New York residents:

- fostering healthy communities;
- supporting clean energy jobs and New York's economic recovery;
- building an inclusive clean energy economy; and
- accelerating the transition from natural gas to a low-carbon future.

All these areas build on work already underway at NYSERDA, representing the priorities for the entire organization.

Thankfully, New York will remain at the vanguard of climate progress, even with the transition to a new presidential administration in Washington, D.C. After New York embraced sweeping change in 2019 with the signing of the Climate Act, additional legislative action in 2020 has positioned New York to accelerate the development of responsibly sited renewable resources, with accompanying measures for robust grid planning and investment and new state roles for boosting renewable energy development, especially on underutilized sites. Regulatory action in 2020 followed similar suit, including the adoption and approval of the expanded and nation-leading goal to achieve **70% renewable energy by 2030 through the Clean Energy Standard**, along with historic new targets for energy efficiency and building and vehicle electrification.

**New York will remain
at the vanguard of
climate progress.**

NYSERDA remains at the heart of these and other efforts to double-down on progress toward the State's unprecedented clean energy and carbon reduction mandates, and we are laser focused on near-term action given the imperative of building back better from the coronavirus pandemic.

Just recently in early 2021, Governor Cuomo announced the largest combined renewable energy awards ever by a state in the U.S. These unprecedented procurements resulted in two offshore wind projects, Empire Wind 2 and Beacon Wind, and 24 large-scale land-based clean energy projects awarded by NYSERDA, totaling more than 4,700 megawatts—enough new renewable capacity to power almost 2 million New York homes for at least 20 years. In addition to delivering clean, renewable energy, these projects combined are expected to spur nearly \$14 billion in direct investments and create over 8,600 good-paying short- and long-term jobs which will help stimulate the State's economic recovery. The offshore wind projects will furthermore leverage almost \$3 of private funding for every \$1 of public funding for a combined \$644 million investment in resilient port facilities in the Capital Region and Brooklyn. Once completed, the offshore wind projects and land based projects will, when combined with the dozens of large-scale renewable energy projects under development, more than double the State's existing renewable generation and bring New York to over 50% electricity from renewable sources to support Governor Cuomo's 70% by 2030 renewable energy goal.

The next three years will be looked back on as momentous for New York's clean energy transition and climate leadership. Major planning and scoping efforts will play out before the Climate Action Council, billions of dollars of project investments will be committed, and we will begin in earnest an unprecedented scale-up and construction of clean energy infrastructure to meet the call of the climate crisis and develop a cleaner, more affordable, and more resilient energy system. New technological innovations will bring us closer to the realization of energy breakthroughs needed to address the most difficult to decarbonize sectors and use-cases, promising bright new climate-tech solutions that New York can export to the world.

I'm immensely proud to work at NYSERDA, serving the people of New York State. Thanks to the dedicated work and excellence of our teams across the Authority, the opportunities for us to increase our impact will continue to grow. I hope all our stakeholders find this Strategic Outlook valuable in highlighting how we will continue to lead and build on our knowledge and success to date and drive toward a better, cleaner, more resilient future, where New York's people can flourish.



**Doreen M. Harris,
Acting President
and CEO, NYSERDA**

This forward-looking document reflects State policy and NYSERDA's plans as of January 2021. Because New York's energy policy objectives continue to develop in response to the evidence that aggressive action is needed to combat climate change—and greater ambition is possible—updates to particular targets will be noted on the Strategic Outlook webpage: nyserdera.ny.gov/Strategic-Outlook.

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NYSERDA and Its Context

NYSERDA'S EVOLVING CHARGE

In 2020, NYSERDA undertook an exercise to revisit and refresh its mission and vision statements to better reflect many of the new imperatives that are increasingly driving and shaping the Authority's work. Upon closer look, it was clear that the important themes of climate change, equity and inclusivity, jobs and economic opportunity, public health, and resilient communities must be central to its mission and vision going forward.

NYSERDA IS PROUD TO PRESENT A NEW MISSION AND VISION STATEMENT TO GUIDE THE ORGANIZATION'S CURRENT AND FUTURE INITIATIVES.

Our Vision:

New York is a global climate leader building a healthier future with thriving communities; homes and businesses powered by clean energy; and economic opportunities accessible to all New Yorkers.

Our Mission:

Advance clean energy innovation and investments to combat climate change, improving the health, resiliency, and prosperity of New Yorkers and delivering benefits equitably to all.

Our Promise:

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



STATE POLICIES AND COMMITMENTS THAT STEER NYSERDA'S WORK

Under the Climate Leadership and Community Protection Act (Climate Act), Governor Andrew M. Cuomo is driving the most aggressive climate and clean energy agenda in the nation, setting New York on a path for a just transition to carbon neutrality, spurring the growth of the green economy while prioritizing the needs of disadvantaged communities across the State. New York State—a founding member of organizations like the Regional Greenhouse Gas Initiative (RGGI) and the U.S. Climate Alliance—aims to meet the energy-related challenges posed by climate change head on, while creating economic opportunities.

As co-chair of the State's Climate Action Council, NYSERDA plays a critical role in charting the direction of New York's energy policies.

CLEAN ENERGY ECONOMY

nearly 159,000 clean energy jobs

now

RENEWABLE ENERGY

6,000 MW of distributed solar

by 2025

RESILIENT and DISTRIBUTED GRID

1,500 MW of energy storage

ENERGY EFFICIENCY

185 TBtu end-use savings in buildings and industrial facilities

RENEWABLE ENERGY/ CLEAN ENERGY STANDARD

70% electricity from renewable energy

by 2030

GHG REDUCTION

40% reduction in greenhouse gas emissions from 1990 levels

3,000 MW of energy storage

30,000 employed in storage sector

NYSERDA'S ROLE

As New York State's clean energy and climate innovation agency, NYSERDA plays a key role in implementing the State's nation-leading clean energy and climate policies, programs and actions, delivering a cleaner, healthier, and more prosperous future for all New Yorkers.

NYSERDA is on the front lines of a global energy transition, bringing energy expertise and public service to the challenges of fighting climate change and accelerating the pace to a green energy future.

NYSERDA works to foster the transformation and expansion of markets, pushing them to accurately value clean energy, energy efficiency, and resilience—while encouraging competition and innovation that delivers value to consumers. In so doing, NYSERDA uses a data-driven approach both to guide program design and to provide for high levels of accountability and transparency. NYSERDA focuses on:

- De-risking energy transitions and deployment from technological and business model innovation, to demonstration projects, to broad commercialization.
- Reducing hard and soft costs of clean energy development by driving demand and focusing the efforts of key stakeholders, as well as by supporting and focusing technological and process innovation.
- Leveraging program investments to support job creation in the clean energy economy and expanded access to economic opportunities for disadvantaged communities.
- Designing and administering novel programs and pilots to meet the needs of emerging policy priorities and deep decarbonization pathways.
- Providing targeted financial support where up-front costs present a persistent barrier, such as for low- to moderate-income (LMI) consumers and disadvantaged communities.
- Enabling communities to take local action on clean energy, climate, and resilience.
- Instilling confidence in markets and consumers through information, credible analysis, and education.
- Increasing market participants' access to capital by creating attractive precedents and standardizing approaches that capital providers can readily replicate and scale up.
- Investigating and designing ambitious energy and climate strategies for the long-term.

RENEWABLE ENERGY

9,000 MW of offshore wind



by 2035

CLEAN ELECTRICITY

100% zero-emission electricity



by 2040

GHG REDUCTION

85% reduction in greenhouse gas emissions from 1990 levels



by 2050

Amidst a turbulent world and constantly changing external conditions, NYSERDA aims to be a beacon of certainty and reliability for stakeholders and partners in New York State, exhibiting the steadfast and focused attention that will be needed to combat the climate crisis in the decades ahead. **Despite the challenges posed by a global pandemic and economic uncertainty, NYSERDA is leveraging its programs within the flourishing clean energy market to assist in building back better and greener toward the State’s ambitious long-term climate mandates.**

Accelerated Renewable Energy Growth and Community Benefit Act

Passed in April 2020, the Act ushered in a new era for renewable energy development, permitting, and approval—one that aligns the State’s regulatory regime with the urgency of expediting responsibly sited solar and wind. It established a new Office of Renewable Energy Siting (ORES), provided NYSERDA with new Build-Ready authority, and initiated new modeling and procedures for grid investments to integrate renewables.

POLICY FRAMEWORK

The landscape and policy framework surrounding NYSERDA’s work has changed rapidly over the past year. Key drivers of change include:

- Passage of New York’s Climate Leadership and Community Protection Act (Climate Act). Governor Cuomo signed the nation-leading Climate Act into law on July 18, 2019, dramatically raising the bar for the level of ambition that New York State needs to achieve and for other jurisdictions to follow.
- Increased focus on key priority areas stemming from the Climate Act:
 - ▶ Increasing access to (and benefits from) clean energy for disadvantaged communities and low-income consumers
 - ▶ Creating quality jobs in the green economy, ensuring a just transition, and protecting New York workers as we transition to a carbon-neutral economy
 - ▶ Identifying sectors of the economy that require deeper decarbonization (e.g., transportation, buildings)
- Bold action driven at the local level, which will require unprecedented coordination between the State and local government, particularly the Climate Mobilization Act in New York City.
- Passage of the Accelerated Renewable Energy Growth and Community Benefit Act and approval of the 70% renewable by 2030 Clean Energy Standard (CES). Identifying clean electricity as a key achievement in economy-wide decarbonization, these actions cement regulatory and market certainty along with the necessary mechanisms for grid decarbonization.
- Increased attention and need to map the transition from natural gas to clean energy in light of both long-term Climate Act requirements and near-term, on-the-ground supply/demand realities.
- A renewed imperative to align NYSERDA and utility roles for market enablement and program delivery under New Efficiency: New York given that utility investment in energy efficiency and building electrification measures will increase substantially over the next few years—coupled with short timelines for achieving targets.

Advancing Internal Objectives for Diversity, Equity, and Inclusion

In 2020, NYSERDA began a comprehensive effort to examine and improve diversity, equity, and inclusion (DE&I) across the Authority. While NYSERDA has long held as a guiding principle the importance of valuing diversity and inclusion, the recent efforts reflect an elevated focus on making meaningful, concrete improvements across representation, equitable outcomes, work environment/engagement, and other dimensions—all of which will be captured in a DE&I Strategic Plan to be released soon in 2021. As highlighted throughout this year's strategic outlook, this internal work and focus is integrated with our external work in building a more inclusive clean energy economy.

- The need to build on recent policy developments (EV Make Ready Order, Medium- and Heavy-Duty Vehicles MOU) in order to make deep in-roads in reducing emissions from transportation, which is the largest contributor of emissions in the State.
- Extreme weather events, which are increasing in frequency and severity and placing rapidly increasing strain on our infrastructure and communities, necessitating the need to place resiliency at the heart of clean energy and climate solutions.

These new drivers of change build upon ongoing challenges and priorities that must continue as core areas of focus.

- The need to ensure energy affordability for all New Yorkers as the energy system undergoes transformation
- The importance of leveraging market activity and private capital to achieve aggressive policy goals
- The imperative to continue building public support for difficult systematic changes such as expanding support for large-scale projects and changing of consumer behaviors

At this critical inflection point for our climate and energy systems, NYSERDA has been and will align policy and program offerings to reflect these new and significant drivers of change, including prioritization of the key strategies and policies outlined on the next two pages.

Climate Leadership and Community Protection Act | (Climate Act)

Lays the groundwork for achievement of New York's nation leading climate targets under Governor Cuomo's leadership, while calling for an orderly and just transition to clean energy that creates jobs and continues growing a green economy. A minimum of 35%—with a goal of 40%—of benefits of clean energy investments will benefit disadvantaged communities.

Under the Climate Act, the Climate Justice Working Group is charged with developing a definition/criteria for defining Disadvantaged Communities, which will guide the delivery of benefits of investments to these communities.

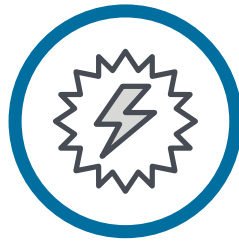
BUILDING BLOCKS OF NEW YORK'S CLEAN ENERGY AGENDA



Transportation



Buildings



Electricity



Economy Wide



Regional



Climate Act Scoping Plan

Recommendations and policies to achieve 85% GHG reduction by 2050, target carbon neutrality



Clean Energy Fund

\$5B fund for four key program portfolios:
 > Market Development > NY Green Bank
 > NY-Sun > Innovation & Research



Clean Energy Standard



Designed to transform the generation of electricity to renewable and zero-emission



Make Ready

Transportation emissions reductions through build-out of electric vehicles market and infrastructure



New Efficiency: New York

Comprehensive set of strategies for delivering energy efficiency savings and emissions



NYS Clean Heat

Replacing onsite fuel combustion for heating and cooling with efficient, electric heat pumps (air, ground)



Regional Greenhouse Gas Initiative (RGGI)



Cooperative effort among several states to cap and reduce CO₂ emissions from power plants



U.S. Climate Alliance

Bipartisan coalition of 24 states and Puerto Rico committed to achieving the goals of the Paris Agreement

Mission Outcomes and Strategic Focus Areas for 2021–2024

NYSERDA's primary mission outcomes are presented in the following pages. For each outcome, NYSERDA strategies over the planning horizon are presented along with a summary of NYSERDA's unique role in delivering on the critical outcome. Indicators of progress are also presented to ensure that movement in the market and progress toward these goals can be tracked.

The mission outcomes that NYSERDA seeks to advance to support the energy transformation in New York State include:



**GREENHOUSE GAS
EMISSIONS REDUCTION**



**RENEWABLE
ENERGY**



**ENERGY
EFFICIENCY**



**CLEAN ENERGY
ECONOMY**



**RESILIENT AND DISTRIBUTED
ENERGY SYSTEM**

Over the planning horizon, NYSERDA will concentrate on the following strategic focus areas to drive progress under each mission outcomes. These strategies are critical to achieving our long-term energy and greenhouse gas emission reduction goals:



**BUILDING AN
INCLUSIVE CLEAN
ENERGY ECONOMY**



**SUPPORTING CLEAN
ENERGY JOBS AND
NEW YORK STATE'S
ECONOMIC RECOVERY**



**ACCELERATING THE
TRANSITION FROM
NATURAL GAS TO A
LOW-CARBON FUTURE**



**FOSTERING HEALTHY
COMMUNITIES**

For each of these strategic focus areas, statewide priorities are presented along with key NYSERDA actions for 2021–2024. These strategic focus areas embody a common theme of centering around people—the residents and communities across New York State who utilize the energy system every day and have the potential to benefit from NYSERDA’s programs and policies.

These strategies will be crucial for achieving our ambitious and necessary climate objectives. Critical focus will be on helping historically marginalized New Yorkers access the growing green energy economy and clean energy job opportunities; supporting families to learn about and choose cleaner home appliances; and empowering neighbors, communities, and businesses to drive climate action and public health wins.

Many efforts will begin producing tangible outcomes in the near term, while others represent an acceleration in focus for a transition that will take many decades to unfold.



Greenhouse Gas Emissions Reduction

STATE POLICY GOAL
FOR GREENHOUSE GAS (GHG) EMISSIONS REDUCTION

The Climate Act sets a greenhouse gas reduction target of 40% by 2030 and 85% by 2050, each below 1990 levels.

Hitting these targets will enable the State to advance economy-wide carbon neutrality. In other words, it would mean that New York State is doing its part to reduce carbon pollution and the causes of climate change, while establishing a model for other jurisdictions to follow. The Climate Act also set in motion a process to develop an updated GHG accounting methodology, which the Department of Environmental Conservation (DEC) has commenced.

2020–2021 Climate Action Council and
Advisory Panel work

2021–2022 Draft and Final Scoping Plans
(Economy-Wide)

2023–2024 DEC Sector-Based
Emissions Regulations

2030 40% reduction in greenhouse gas
emissions, below 1990 levels

2050 85% reduction in greenhouse gas
emissions, below 1990 levels

Mission Outcome:

Greenhouse Gas Emissions Reduction



NYSERDA'S ROLE

Co-Chair the Climate Action Council to craft a roadmap of policies needed to achieve the Climate Act's goals, including co-leadership of Energy Efficiency and Housing and Power Generation Advisory Panels and Just Transition Working Groups, through analytical/modeling support for pathways analysis.

Guide and facilitate the State Energy Plan development and shape energy policies throughout New York State.

Identify and implement strategies for energy, buildings, and transportation sector emissions reductions and other GHG mitigation strategies.

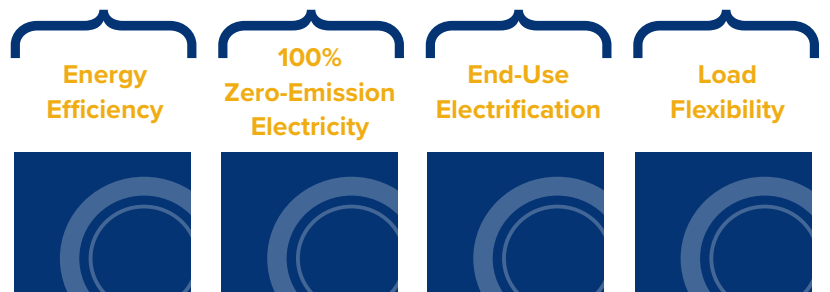
Develop and track statewide greenhouse gas inventory, supporting DEC in new emissions methodology rulemaking.

Facilitate State agencies' efforts to Lead-by-Example and drive toward carbon-neutral operations.

STRATEGIES FOR 2021–2024

- Support policy development and planning, including Climate Act Scoping Plan, Carbon Neutral Buildings Roadmap, Building Electrification Roadmap, and Clean Transportation Roadmap.
- Advance solutions to drive emissions reductions in all areas of New York's economy—through a foundation of energy efficiency, decarbonizing electricity supply, and beneficial electrification of buildings, transportation, and industrial applications.
- Spur development of innovative, next-generation solutions driving emissions reductions, from hardware, software, and materials to natural carbon solutions.
- Support communities across the State in implementing their own sustainability and clean energy goals, including localized clean heating and cooling campaigns, and widespread adoption of new stretch energy/building codes.
- Conduct analysis and program development to better spotlight and target the co-benefits of GHG reductions, especially the public health benefits that can be delivered to disadvantaged communities via reduction of co-pollutants.

Foundational pillars of deep decarbonization across all pathways:



INDICATORS OF PROGRESS

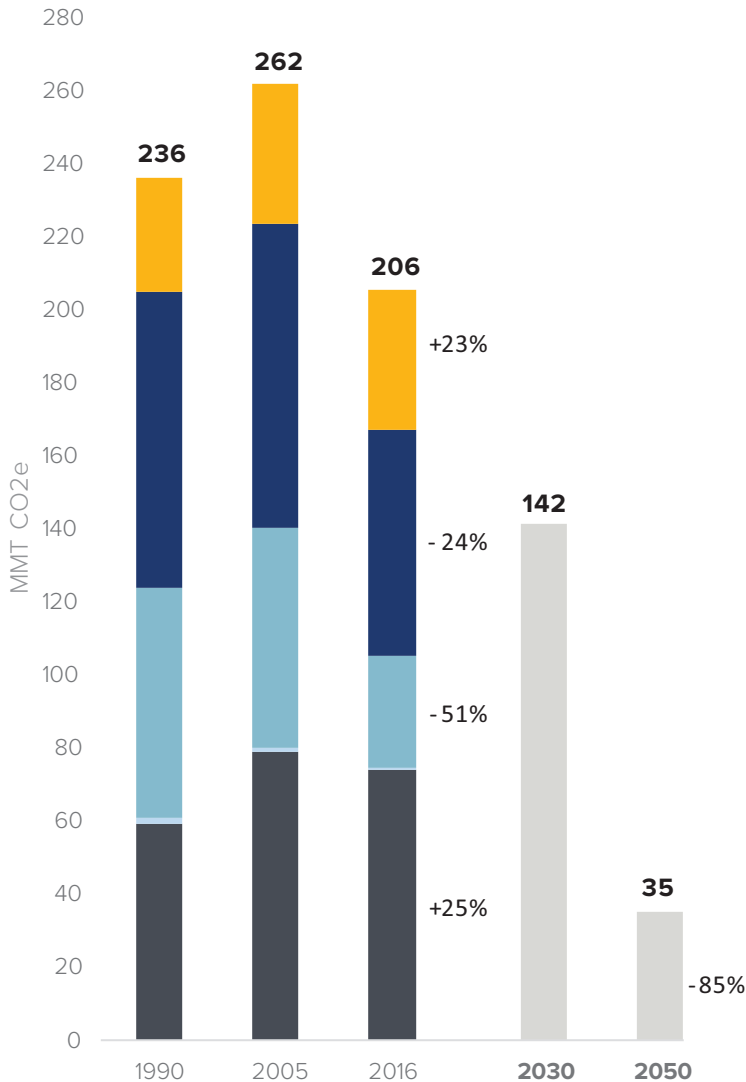
- Levels and trends in GHG emissions from sources statewide



2050 target: 85% reduction

from 1990 emissions baseline

NOTE: all emissions inventory numbers expected to be updated in 2021 following ongoing DEC rulemaking on emissions accounting methodology to align with the Climate Act.



- Non-Fuel
- Buildings: Combustion
- Buildings: Electricity
- Transportation: Electricity
- Transportation: Combustion
- Goal

HIGHLIGHTED PROGRAMS AND INITIATIVES

Clean Energy Fund accelerates the deployment of clean energy solutions while driving economic development.

Clean Energy Standard provides the framework for achieving 70% renewable electricity by 2030 via the build-out of large-scale renewable resources for New York State. Achievement supported by complementary actions initiated in 2020 legislation (Build Ready, Office of Renewable Energy Siting [ORES], Power Grid Study).

Energy Storage deployment and other **renewable energy integration measures** to get more renewables on the grid, minimize and avoid delivery impacts, bolster system flexibility, and support resiliency.

Regional Greenhouse Gas Initiative (RGGI) assigns a price to power plant emissions and directs revenue to clean energy initiatives.

EV Make Ready Order and Clean Transport prizes represent an important change in the State's commitment and investment to zero-emission vehicle adoption, with funding for utility infrastructure to support electric vehicles and NYSERDA-run prizes around environmental justice, advanced mobility, and medium- and heavy-duty vehicle innovation.

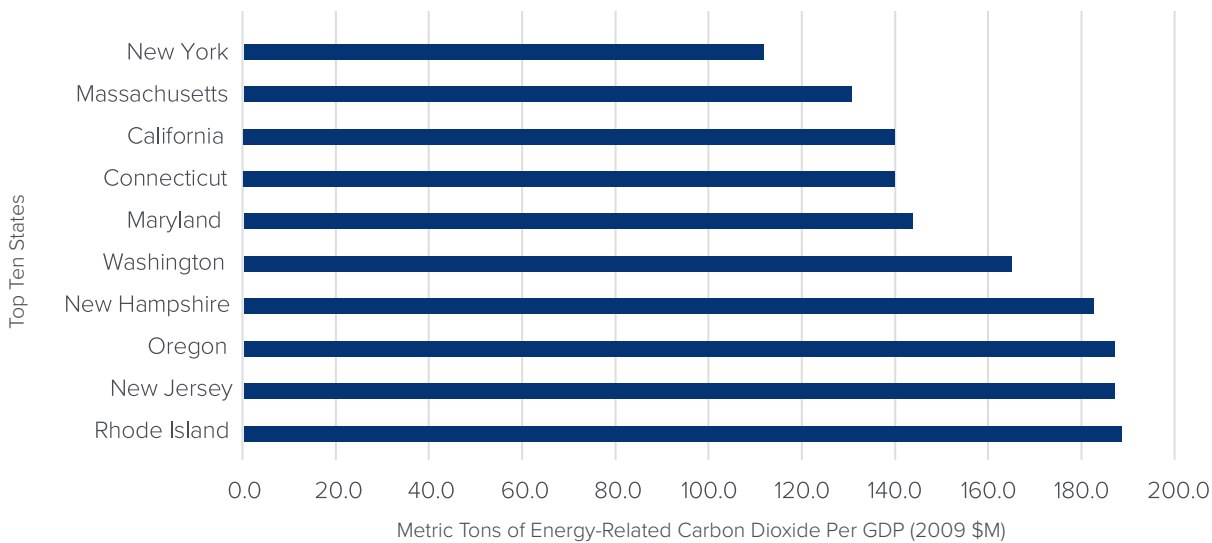
Clean Energy Communities recognizes and rewards communities for implementing clean energy actions that save taxpayer dollars, create jobs, and improve the environment.



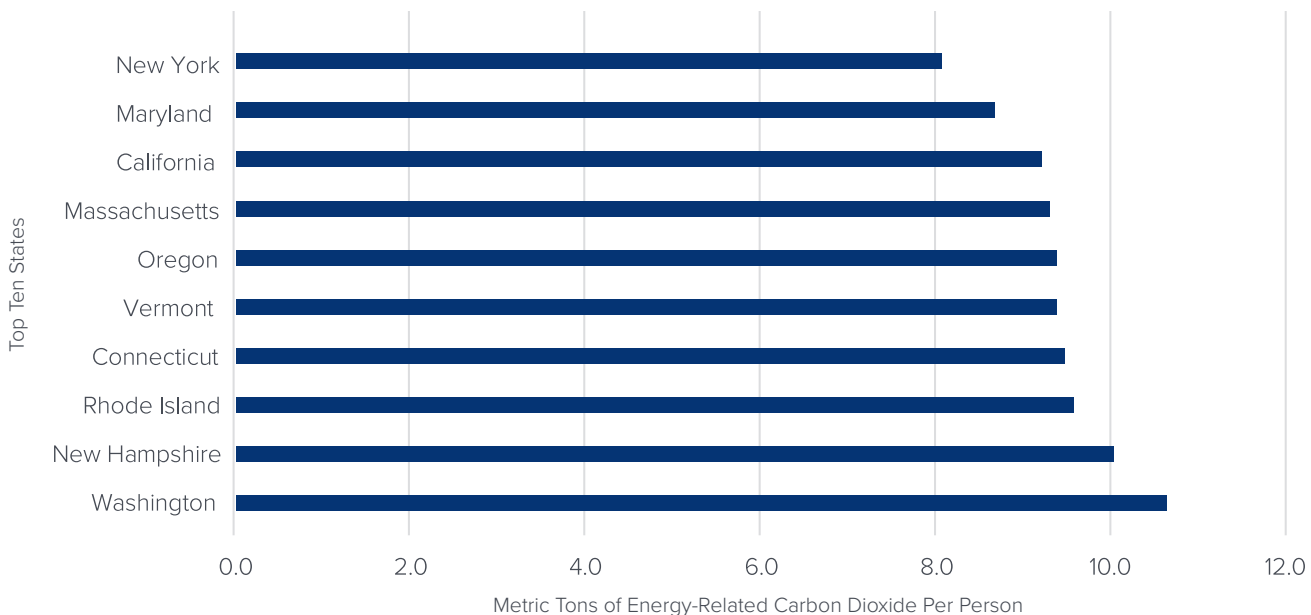
As of 2017 (most recent U.S. E.I.A. data), New York is the most carbon-efficient state in the United States on both a per capita basis (8 metric tons of energy-related carbon dioxide per person) and a per GDP basis (112 metric tons of energy-related carbon dioxide per 2009 million dollars of GDP).

Sources: U.S. Energy Information Administration, State Energy Data System, and EIA calculations made for this analysis.

CARBON INTENSITY OF THE ECONOMY BY STATE



PER CAPITA ENERGY-RELATED CARBON DIOXIDE EMISSIONS





Renewable Energy

STATE POLICY GOAL
FOR RENEWABLE ENERGY

The Climate Act mandates that at least 70% of New York's electricity come from renewable energy sources such as wind and solar by 2030 (70x30).

As a companion to the Climate Act, the Accelerated Renewable Energy Growth and Community Benefit Act followed in the Spring of 2020 to address the urgency of our climate transition. The intent is to integrate the acceleration of permitting timelines, seeking regulatory efficiencies, mandating careful study of our electricity grid and the identification of priority upgrades, and deepening community engagement. Armed with the nation's most aggressive climate goals and expedited processes to match, achievement of the 70 x 30 mandate will move the State closer to delivering just, equitable climate action to New Yorkers, including improving air quality, buttressing a more resilient grid, and spurring a clean economy through investments, workforce development, and job creation.

In the 21st Century, the future is electric and NYSERDA is working tirelessly to remove barriers and deliver our State's goals and benefits to New Yorkers—including more than \$17 billion in net benefits estimated over the lifetime of Tier 1 and offshore wind procurements under the CES.

Mission Outcome:

Renewable Energy



NYSERDA'S ROLE

Facilitate the next decade of steady, predictable procurements

for renewable and zero-emission generation, offering market confidence and stability to supply chains.

Support smart siting policies to maximize co-benefits between industries, cultivate infrastructure ecologies, and build community and stakeholder engagement.

Support climate equity through the prioritization of benefits and workforce development and training delivered to Disadvantaged Communities across the State through renewable energy development.

Drive supply chain localization, local investments, job creation, and workforce capabilities.

Reduce costs by delivering economies of scale, removing barriers to deployment, and supporting innovation.

Plan for the renewable grid of the future by identifying and supporting priority grid investments that facilitate movement of new renewable energy across the State, and the policies and planning necessary to maximize the benefits of renewable energy for ratepayers and communities.

STRATEGIES FOR 2021–2024

- Accelerate implementation programs to achieve the Climate Act's 70x30 renewable goal as part of the next generation of the Clean Energy Standard, including launch of a new Tier 4 focused on delivering clean energy directly into Zone J/New York City.
- Continue the sprint toward the 6,000 MW solar goal by 2025 and beyond, 3,000 MW of storage, 9,000 MW of offshore wind targets, and the delivery of benefits to Disadvantaged Communities.
- Collaborate with market participants to complete technical studies and promote infrastructure investments like transmission and energy storage that will unlock system efficiencies and unbundle resources to drive progress on our goals and ensure cost savings to ratepayers.
- Collaborate with utilities and other market participants to build transparency in interconnection processes, overcome grid constraints on project capacity, and pricing/curtailment issues.
- Develop and launch new planning and execution framework for at least 9,000 MW of offshore wind by 2035, as a successor to NYSERDA's Offshore Wind Master Plan.
- Engage in detailed sector studies of evolving resiliency design approaches and best practices to mitigate future climate risks and to deepen the carbon performance of projects through reducing embodied carbon.



HIGHLIGHTED PROGRAMS AND INITIATIVES

New York State continues to grow a strong pipeline of projects to meet the 70x30 goal. As of September 30, 2020, there were approximately

47 GW of active renewable energy projects in the NYISO interconnection queue.

Additionally, there are currently 56 projects in the Active Article 10 Queue, with five applications being approved in the last year, indicating more of the pipeline is coming to fruition. There have been 868 MW of storage awarded statewide, along with 2.5 GW of installed distributed solar and a pipeline of 2 GW (high project maturity—lower than 10% attrition).

INDICATORS OF PROGRESS

- MWh: progress toward the 70x30 and 100x40 targets
- MW and facilities (large-scale, offshore, and behind-the-meter) completed and in the pipeline: progress toward goals
- Benefits of renewable energy investments accruing for disadvantaged communities (%) and M/WBE engagement
- Private market investment, clean energy jobs, and costs per Renewable Energy Credit (REC)

Large-Scale Renewables

supports the development of large-scale renewable energy projects.

Offshore Wind establishes a significant, cost effective, renewable generation source with promise of new industry in New York State.

Build-Ready is a new program that complements private sector development and expedites the pre-development of large-scale renewable assets with **a focus on underutilized, previously developed sites.**

Community Solar makes solar affordable and accessible for all New Yorkers.

Solar for All makes subscriptions to community solar projects available at no cost for low-income consumers.

NY-Sun and Energy Storage drive distributed solar adoption through residential/commercial rooftop and larger community solar projects, reducing costs, making solar accessible to all New Yorkers, while deploying 1,500 MW of energy storage by 2025 with a goal of realizing a self-sustaining market.

Raise the Green Roof is a new collaboration between NYSERDA, the NY Green Bank, and Homes and Community Renewal (NYSHCR) to deploy solar and energy efficiency retrofits throughout NYSHCR's affordable housing portfolio, aiming to bring solar to approximately 5,000 affordable housing units statewide.

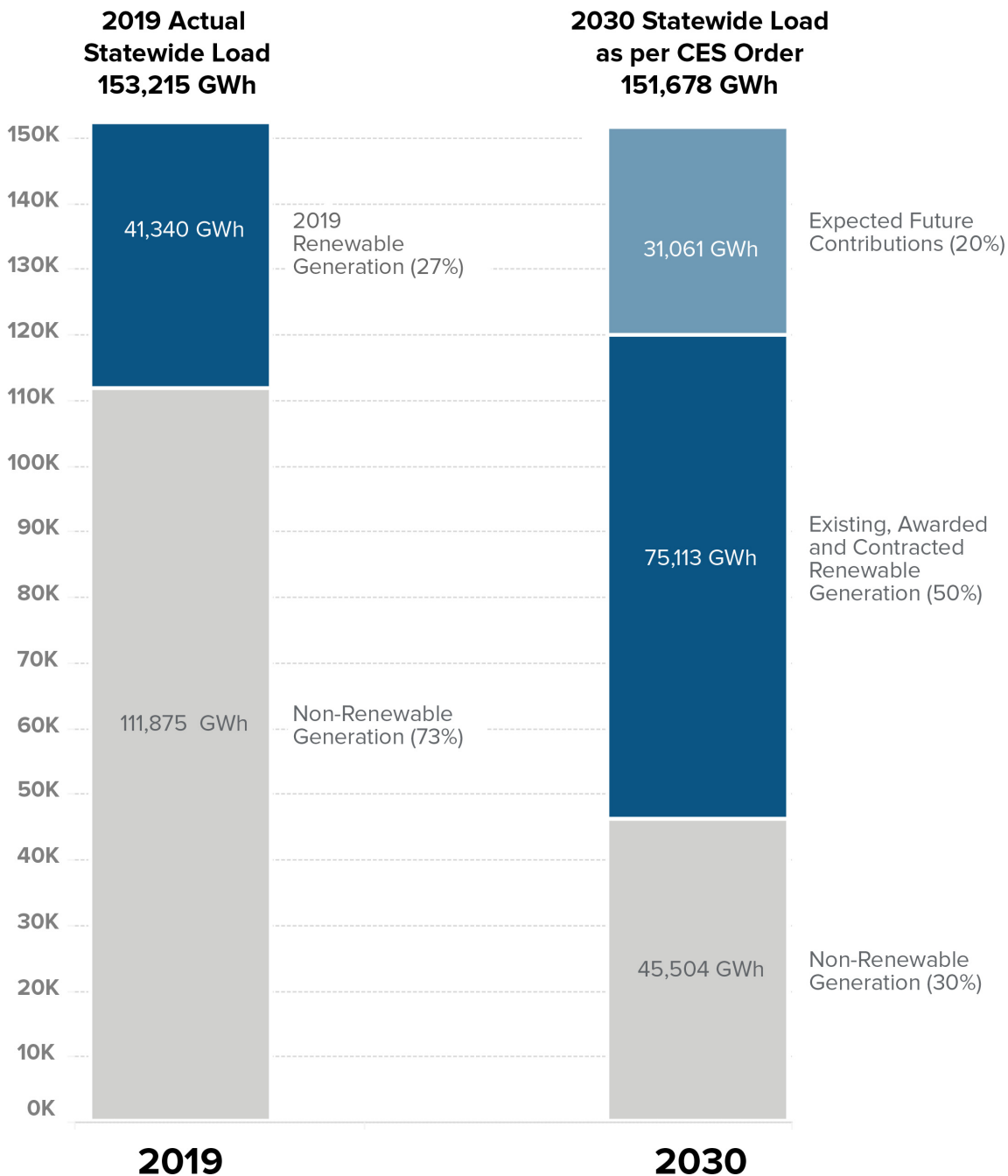


2030 Clean Energy Standard target: 70% electricity from renewable sources

PROGRESS TOWARDS 70X30 GOAL

106,174 GWh to reach goal*

** GWh required to meet goal is based on 2020 Clean Energy Standard Order load projection for 2030 and is subject to future adjustment.*





New York's Projected 2030 System Mix

To-be-Contracted:
NYSERDA Offshore Wind

12%

Awarded and/or Contracted:
NYSERDA Land-Based Renewables

Awarded and/or Contracted:
NYSERDA Offshore Wind

5%

NY-Sun
5%

To-be-Contracted:
NYSERDA
Land-Based
Renewables
15%

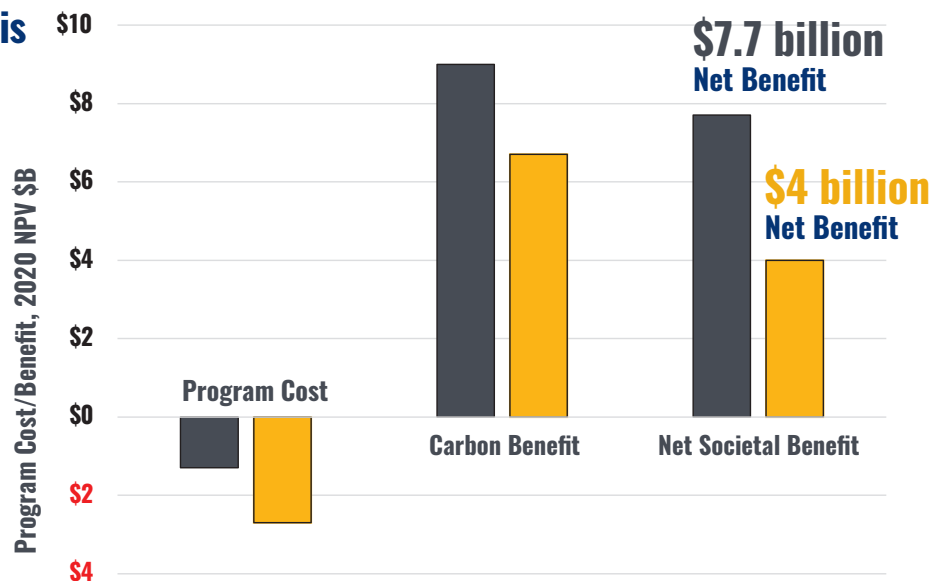
Non-Renewables
30%

Baseline
Renewables
27%

Under Contract: NYPA and PSEG
1%

Costs and Benefits Analysis to Reach 70% Renewable Electricity by 2030

■ New Land-Based Renewables
■ Offshore Wind





The Climate Act ramps up renewable energy goals, including:

QUADRUPLING NEW YORK'S OFFSHORE WIND TARGET TO

9,000 MW BY 2035

up from 2,400 MW by 2030

DOUBLING DISTRIBUTED SOLAR DEPLOYMENT TO

6,000 MW BY 2025

up from 3,000 MW by 2023

PSC PROCESS TO AMEND CLEAN ENERGY STANDARD

In October 2020, the PSC approved the expanded Clean Energy Standard requiring that:

- a minimum of 70% of statewide electricity be renewable by 2030.

Future proceedings will similarly require:

- statewide electricity be zero-emission by 2040.



Energy Efficiency and Building Decarbonization

STATE POLICY GOAL
FOR ENERGY EFFICIENCY AND
BUILDING DECARBONIZATION

New York set a 2025 statewide energy efficiency target of 185 TBtu of cumulative site energy savings which was codified by the Climate Act.

While this target will deliver one-third of New York's interim 40x30 climate goals, the 185 TBtu energy efficiency goal is the beginning of a much more ambitious change needed to decarbonize buildings consistent with Climate Act. Building energy efficiency and electrification will play a dominant role in putting the State's building sector on a course to carbon neutrality, while creating better living and working spaces for New Yorkers and economic opportunity in the form of clean energy jobs. Advances in load flexibility will minimize the grid impacts of statewide beneficial electrification of buildings. Efforts will also focus on delivering benefits to disadvantaged communities and low- and moderate-income New Yorkers.

Mission Outcome:

Energy Efficiency

and Building Decarbonization



NYSERDA'S ROLE

Develop and manage programs to eliminate barriers and increase adoption of energy efficiency and electrification, providing financial and technical assistance to solution providers and consumers, particularly low- and moderate-income consumers.

Develop and demonstrate strategies to achieve deep energy and carbon savings.

Deliver policy leadership on energy efficiency and building electrification through Climate Action Council, Energy Efficiency and Housing Advisory Panel, Carbon Neutral Buildings Roadmap, and Building Electrification Roadmap.

Provide technical assistance to advance energy codes, appliance standards, and building mandates, supporting structural improvements in energy efficiency and emissions reductions across the State.

Provide financing for energy efficiency and building electrification market participants.

STRATEGIES FOR 2021–2024

- Complete the carbon neutral buildings and building electrification roadmaps to identify strategies and paths to accelerate transition of New York's building stock to incorporate deep efficiency, more efficient electric heating and cooling technologies, and grid-connected capability.
- Drive deeper levels of efficiency and carbon savings in buildings using a variety of strategies, including peer-based challenges, support of long-term energy planning within the capital improvement cycle, incorporation of sensors/advanced analytics to improve operations, demand aggregation, supply-side engagement and other cost compression strategies, as well as development and demonstration of new solutions to deliver higher performing, healthier buildings.
- Develop a robust portfolio of programs for low-income consumers and disadvantaged communities, in coordination with utilities and housing agencies.
- In partnership with utilities, launch a comprehensive building electrification initiative with consumer incentives and market support to move New York toward all-electric homes and buildings and accelerate transition away from natural gas and fossil fuel.
- Build market demand by increasing consumer awareness and providing decision-quality information on energy efficiency and building electrification opportunities for building owners and tenants—capitalizing on key points in a building life cycle (e.g., tenant turnover, major renovations, property transfer, equipment replacement).
- Support statewide building decarbonization through improved appliance standards, building mandates, and advanced building codes, with 2030 goals of establishing a low energy use intensity energy code combined with a mandatory zero on-site GHG emissions building code and using appliance standards and building mandates to promote decarbonization in existing buildings.
- Provide support for consumers in gas constrained areas of New York by providing information and assistance to adopt energy efficiency and clean heating solutions.



HIGHLIGHTED PROGRAMS AND INITIATIVES

2025 energy efficiency targets will reduce energy consumption by the equivalent of 1.8 million homes annually and create as many as 50,000 new jobs



INDICATORS OF PROGRESS

- Avoided energy use: total TBtus across all fuels (natural gas, electricity, etc.)
- GHG emission reduction from the building sector (annual CO₂e)
- Benefits of energy efficiency investments accruing to disadvantaged communities (%) and reduced on-site fossil fuel combustion in environmental justice (EJ) Areas
- New York State's Clean Energy Dashboard can be used to track indicators of progress, found at nyscrda.ny.gov/view-clean-energy-dashboard.

Public Service Commission Orders on New Efficiency: New York doubled utility investment in energy efficiency, created a nation-leading building electrification initiative (NYS Clean Heat), and advanced an \$800 million investment in LMI Energy Efficiency.

Healthy Homes Pilot with Department of Health integrates health services with home energy efficiency improvements and safety measures.

Indoor Air Quality and Energy Efficiency Pilot identifies ways to mitigate spread of COVID in buildings, while optimizing energy efficiency.

EmPower New York and Assisted Home Performance provides no- and low-cost energy efficiency solutions to income-eligible New Yorkers.

Home Comfort Pilot develops standardized envelope solutions that improve energy performance and make homes heat pump ready.

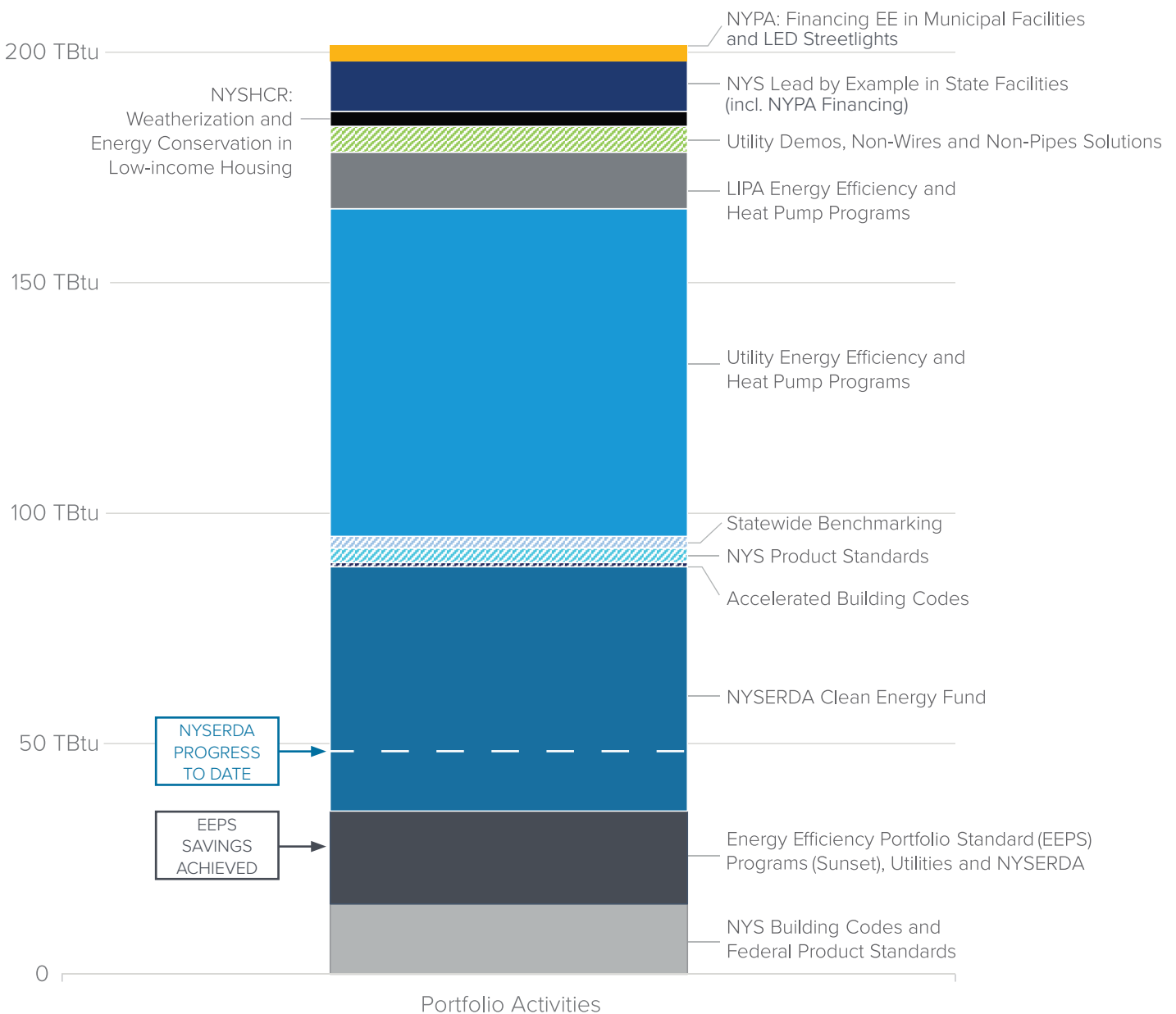
Buildings of Excellence competition recognizes and rewards the design, construction, and operation of very low or zero carbon emitting multifamily buildings.

Empire Building Challenge demonstrates low-carbon solutions for tall buildings, in partnership with real estate industry and solution providers.



2025 target: 185 TBtu of onsite energy savings*

ENERGY EFFICIENCY ACTIVITIES TOTAL SITE TBTU SAVINGS
BY 2025 (CUMULATIVE ANNUAL, 2015–2025)



* Graphic does not reflect roughly 15 TBtu of overlap between policies



Clean Energy Economy

STATE POLICY GOAL
FOR THE CLEAN ENERGY ECONOMY

With nearly 165,000 clean energy jobs across the State at the end of 2019 (pre-pandemic)—and with nearly triple the rate of statewide job growth from 2018 to 2019—New York’s nation-leading climate policies continue to drive investment and job-creation.

Despite projections for additional growth in the near-term, the State’s clean energy sector suffered an enormous setback in 2020 due to upwards of 20,000 unemployment claims filed in the immediate aftermath of the coronavirus pandemic. Subsequent job rebounds have shown tremendous resilience in the sector—only 8.1% of New York’s clean energy workers who lost their job remain unemployed as of November 2020, compared to three out of four clean energy workers who lost their job nationally. Nonetheless, the State needs the clean energy industry to continue to grow and thrive in the years ahead, helping drive a sustainable and equitable economic recovery for New York.

Mission Outcome:

Clean Energy Economy



NYSERDA'S ROLE

Unlock new job growth, leveraging marquee program investments such as offshore wind port infrastructure and competitions for deep building retrofits to bring global industries to New York.

Provide workforce development and training programs to grow the training capacity and human resources needed to build the clean energy economy, and support a just transition for historically disadvantaged populations and industries affected by the transition away from fossil fuels.

Cultivate demand for clean energy solutions to attract clean energy companies from all ends of the global supply chain looking to serve the growing local market, supported by proactive cross-agency attraction efforts.

Foster capital attraction and support commercialization of products, services, and business models (deployment models) from clean energy startups and maturing companies.

Deliver more targeted assistance to energy startups/innovation firms, leveraging support from federal stimulus efforts and future federal incentives to advance clean energy innovation.

Establish precedent for encouraging greater private sector investment and business models through new, substantial commitments of institutional capital in the clean energy economy.

Achieving the Climate Act's nation-leading goals and building back a thriving industry sector will mean expanded deployment of existing technologies as well as substantial investment in the State's clean energy innovation economy to develop new solutions for a low-carbon future. New York's ecosystem of start-ups will develop these technology and business-model solutions for demonstration and use in the State, as well as for export to markets across the globe. Furthermore, to build an inclusive clean energy economy and cultivate a just transition, NYSERDA, other State agencies, and clean energy industry partners will be ramping up efforts to develop a pipeline of skilled labor and open-up economic opportunities to workers, communities, and historically disadvantaged populations who may be transitioning from fossil fuel-based economic activities.

STRATEGIES FOR 2021–2024

NY Green Bank

- Increase the size, volume, and breadth of sustainable infrastructure investment activity throughout the State, expand the base of investors focused on clean energy, and increase market participants' access to capital on commercial terms.
- Address barriers to mobilization of private capital and financing for clean energy projects: identify where barriers exist, demonstrate investment model, entice private capital, and repeat.
- Support priority policy areas through a growing pipeline of investments in energy efficiency, energy storage, electric vehicles, affordable housing, offshore wind port infrastructure, and beyond.
- Consistent with the goals of the CLCPA, launch a new initiative to invest in projects that support and deliver benefits to disadvantaged communities.
- Explore and refine new financing models (e.g., energy efficiency pay-for-performance) and new technology/solution areas (e.g., microgrids).
- Continue issuing targeted RFPs and organizing convenings in strategic areas to grow the clean energy investment pipeline.
- Remain supportive to counterparties through the future stages of the pandemic and economic recovery, including through Paycheck Protection Program (PPP) loan administration, investment term flexibility, and more.



Innovation

- Support the development of climate technologies necessary to meet the State's Climate Act goals through funding, team-building, customer introductions, advisory services, and the development and support of independent innovation organizations.
- Address barriers and support regulations, processes, and rulemaking that enable, a robust climate innovation economy by stimulating demand and supporting private sector innovation efforts
- Invest in the development of the New York's green economy, supporting relocation of climate-tech companies to New York, the growth of existing companies already in the State, and the human capital of the innovation ecosystem across the State.
- Consistent with the goals of the Climate Act, ensure the State's innovation development system, as well as the innovations developed, deliver benefits to disadvantaged communities.
- Coordinate and partner with the national innovation ecosystem to align and leverage State priorities and support New York climate-tech companies' access to finance and expertise
- Continue to support priority climate innovation firms through future stages of the pandemic and economic recovery

Workforce Development

- Prioritize recruitment, training, job preparedness, and placement for priority populations and disadvantaged communities
- Develop training infrastructure to upskill existing workers and prepare the next generation of clean energy workers in high-growth areas like high-efficiency HVAC, building electrification, energy storage, and offshore wind
- Ensure training curricula and programmatic support respond to industry and market needs
- Provide targeted support to reduce the time it takes to bring a new worker to full productivity and offset risks that might prevent clean energy firms from hiring or training new workers, particularly workers with additional barriers to employment

**New York's
clean energy
industry can
help drive a
sustainable
recovery for
the State's
economy**



INDICATORS OF PROGRESS

- Statewide Clean Energy Industry Jobs
- Priority populations trained and employed in clean energy
- Commercialized climate solutions and launches of incubated firms, including related revenues
- Total value of capital mobilized using NY Green Bank support



NYSDOT'S INNOVATION ROLE: SUPPORT BY STAGE



1
PHASE

Startup Formation

- Proof of Concept Centers
- Proof of Concept R&D Grants
- Accelerator Programs
- Entrepreneurs-in-Residence



2
PHASE

Develop and Market Test

- Incubators
- Ignition Grants
- Entrepreneurs-in-Residence
- Research, Development, and Demonstration Grants and Collaboration



3
PHASE

Commercialize

- Incubators
- NY Climate Progress
- Manufacturing Corps
- Entrepreneurs-in-Residence
- NYS Cleantech Venture Exchange
- Research and Technology Consortia
- Commercial-Scale Technology Demonstrations



4
PHASE

Launch at Scale

- Manufacturing Corps
- Entrepreneurs-in-Residence
- NYS Cleantech Venture Exchange
- Novel Business Models

Visit nysderda.ny.gov/innovation for more information on these programs.



HIGHLIGHTED PROGRAMS AND INITIATIVES

NY Green Bank works with the private sector to increase investments into the State’s clean energy markets, including through transactions related to:

- Community solar/Community distributed generation
- Affordable housing and energy efficiency
- Electric vehicles, charging infrastructure, and clean transportation
- Energy storage

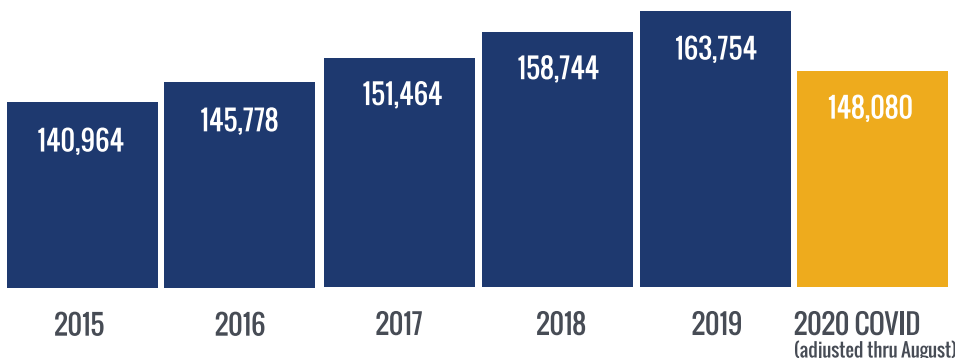
Innovation supports an affordable and just transition and the achievement of New York’s climate goals through investments in and advisory services to researchers and companies, including:

- Tech to Market resources including climatetech incubators such as Urban Future Lab; cleantech accelerators like the Clean Fight and Cleantech Open Northeast; the M-Corps manufacturing scaleup program; and the Entrepreneur in Residence (EIR) mentorship program at Columbia University
- New York Climate Progress, a catalytic convertible note program for climatetech companies
- Natural Carbon Solutions, leveraging farms, forests and under-utilized lands to reduce GHG emissions and increase carbon sequestration
- Long-duration energy storage solutions supporting firm capacity requirements for a clean grid
- Next Gen HVAC program, accelerating the mitigation and phase-out of high global warming potential refrigerants

Workforce Development supports training for new clean energy workers, driven by industry needs, and develops the clean energy sector talent pipeline:

- HVAC/Building Electrification Career Pathway Program
- Building Operation and Maintenance Staff Training
- On-the-Job Training
- Clean Energy Internships
- Clean Energy Talent Pipeline Development

ANNUAL CLEAN ENERGY EMPLOYMENT IN NEW YORK (2015-2020 COVID-ADJUSTED)

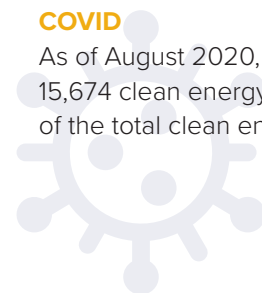


- Clean energy jobs represented almost 1.7% of all employment within the State.
- Between 2018 and 2019, clean energy employment increased by 3.2%, outpacing the total New York employment growth of 1.1%

COVID

As of August 2020, New York lost 15,674 clean energy jobs, about 9.6% of the total clean energy workforce.

5k clean energy jobs restored since COVID-19 re-opening in May 2020





Resilient and Distributed Energy System

STATE POLICY GOAL
FOR THE ENERGY SYSTEM

Build a resilient and distributed energy system that can anticipate, absorb, adapt to, and recover quickly from a wide range of shocks and stresses, including climate, environmental, cyber, financial, aging infrastructure, and other emerging vulnerabilities.

In this period of dynamic and fast-paced change, marked by a global pandemic, wildfires, extreme storms, record-breaking heat, and cyber threats, the energy system faces a range of new risks and disruptions, even as the system moves away from a more vulnerable centralized power generation towards an increasingly balanced, diversified, and digitalized network.

As New York strives to meet its aggressive climate targets, the State will have to contend with new risks and opportunities.

With electric power enabling nearly all critical infrastructure and services, including communications, emergency systems, banking, and transportation, it is crucial that the transition to clean energy and net zero emissions also advances via a resilient and modernized grid. This includes considerations for infrastructure given changing flood zones, sea level rise, and storm surge zones as well as new solutions and designs to withstand high windspeed, hail, and higher temperatures, and advancements in flexible, responsive resources such as energy storage and building load flexibility. Measuring and valuing risk reduction and resilience can help catalyze opportunities to harness the market system in service of these important goals.

Climate impacts land disproportionately on disadvantaged communities—populations that often have fewer resources to respond—so it is vital that investments also address questions of equity with targeted approaches for vulnerable communities. To this end, building a resilient and distributed energy system can also generate new workforce opportunities and create avenues to strengthen social cohesion, a quality of community resilience, through citizen engagement with shared energy and infrastructure.

Mission Outcome:

Resilient and Distributed Energy System



NYSERDA'S ROLE

Lead-by-example by factoring resilience goals in the State's clean energy infrastructure investments.

Partner with other State agencies to identify and implement best practices around climate resilience.

Spearhead next generation of climate adaptation research to provide insights for infrastructure, investment, and energy system planning decisions based on new/updated climate projection data.

Spur development and integration of a wide array of **smart grid technologies** that support a distributed energy system and advance resilience including storage, smart demand response, and vehicle to home/grid (V2H/G) flexible charging.

Continue to administer and refine flagship distributed energy resources (DER) programs like NY-Sun, and energy storage incentive programs to boost resilience, provide grid value, and reduce costs.

STRATEGIES FOR 2021–2024

- Incorporate resilience considerations into NYSERDA programs, including floodplain mapping, onsite generation and storage, and other means to ensure investments factor in shifts like increased electrification, future climate impacts, and other energy system disruptions.
- Explore potential mechanisms for the finance and insurance of resilient energy infrastructure, in partnership with the Department of Financial Services.
- Spur development and integration of smart grid technologies to ensure buildings are flexible and responsive under changing conditions, with a focus on load pockets where environmental and health outcomes are critical (e.g., disadvantaged communities).
- Support resiliency and grid flexibility, i.e., balance the growing intermittent renewable resources. Continue efforts to scale up energy storage to achieve statewide goals, with a focus on the Downstate region where energy storage is critically needed to replace dirty peaker plants, support grid congestion, and offshore wind procurements.
- Drawing from the Carbon Neutral Buildings Roadmap work, develop solutions for resilient communities and resilient housing focusing on passive survivability, resilience solutions for all-electric buildings and facilities of refuge to withstand future disruptions to the energy system.



HIGHLIGHTED PROGRAMS

Innovation's Smart Grid team and the Technology to Market team will launch **initiatives to support a resilient, affordable, flexible clean grid.**

New York Power Grid Study as required in April 2020 Accelerated Renewable Energy Growth and Community Benefit Act legislation

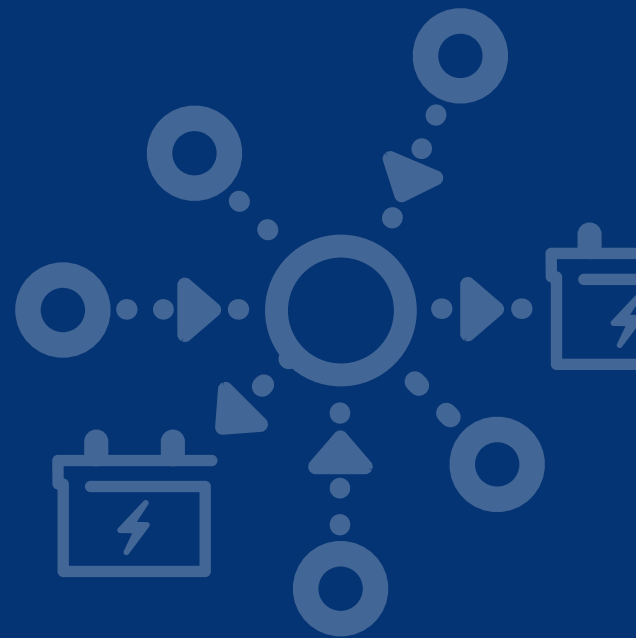
Energy Storage engages those involved in building, installing, integrating, or researching energy storage technology, including efforts to expand opportunities to pair solar and storage statewide (continuing and expanding the strong Residential PV + Storage program on Long island through the DLM tariff).

Fuel NY makes fueling stations resilient to power system outages.

Offshore Wind, including new analysis and program measures related to resilience.

Real Time Energy Management provides the ability to shed or shift loads in response to grid needs as well as the capability to stage critical equipment to maintain building services most needed to support safety and recovery.

Carbon Neutral Buildings Roadmap places strong emphasis on resilience with a full chapter dedicated to resiliency considerations related to building decarbonization.



INDICATORS OF PROGRESS

- Progress toward storage (3,000 MW by 2030) and distributed solar (6,000 MW by 2025) deployment goals
- Statewide grid-interactive building load
- Percentage of NYSERDA solicitations that incorporate resilience provisions

Building an Inclusive Clean Energy Economy



LONG-TERM VISION AND VALUE PROPOSITION

New York State’s frontline communities, including environmental justice, LMI, communities of color, and otherwise disadvantaged¹ communities, have disproportionately been impacted by energy costs; pollution from fossil fuel combustion; disinvestment in housing; systemic inequities in education and workforce opportunities; and limited ability to engage in and inform policy making that would affect their community.

Realizing the objectives of the Climate Act will require foundational shifts in the development and implementation of clean energy policy, programs, and processes to ensure opportunities for residents and disadvantaged communities to participate in and benefit from the clean energy economy.

A strong and inclusive clean energy economy will lead to economic opportunities, improved health outcomes, and engagement for all New Yorkers.

¹ As part of the implementation of the Climate Act, the Climate Justice Working Group is charged with developing criteria for disadvantaged communities for prioritization and benefit through New York State investments in clean energy.



In advancement of the Climate Act objectives, the NYSERDA clean energy portfolio will focus investments to improve energy affordability; reduce pollution from fossil fuel combustion across all sectors for environmental justice; create new economic development opportunities for communities and advance workforce development and training for underserved residents.

In addition, NYSERDA will focus on community capacity development and engagement to ensure the perspectives of residents are incorporated into the development and implementation of clean energy initiatives. Improving diversity, equity, and inclusion within NYSERDA staffing, procurement, and strategic development will also be prioritized to ensure the operations and practices of the Authority can be more representative of and responsive to the diverse needs of New Yorkers.

KEY CHALLENGES/BARRIERS

- Systemic and institutional inequities have led to limited opportunities for communities of color and other frontline or disadvantaged communities to participate in and benefit from the clean energy economy, including access to green jobs, ownership of distributed energy resources, and informing policy and programs.
- Energy burden for lower-income households can exceed 20% of annual income, and nearly half of the population has annual income below 80% of the Area Median Income, with overrepresentation of communities of color.
- Access to capital, split incentives, and historically fragmented administration of key programs present barriers to scaling adoption of clean energy solutions in the LMI market segment and within disadvantaged communities.
- Size of income-eligible/disadvantaged population requires innovative approaches to achieve scale, with precautions tailoring program/policy designs to avoid regressive outcomes/impacts.
- Engaging with disadvantaged communities and bringing their voice to the table is inherently challenging given chronic lack of resources in LMI and EJ communities.



NYSERDA is positioned to drive equity and the realization of an inclusive clean energy economy through its direct investment, as well as through its work with State agencies, utility companies, and community-based organizations.



PRIORITY ACTIONS FOR NEW YORK

- Work toward a goal of driving 40% of the benefits of clean energy spending to disadvantaged communities.
- Increase engagement of frontline, climate-vulnerable communities in the development of the clean energy economy, including ensuring community representation in decision-making and policymaking.
- Align State resources and strategy to increase impact of public investment in energy affordability and expand access to clean energy solutions for lower-income households, affordable housing, and disadvantaged communities.
- Leverage regulatory, policy, and financing mechanisms to increase adoption of clean energy solutions in affordable housing, including beneficial electrification.
- Facilitate a just transition to a clean energy economy by supporting unemployed or underemployed workers and priority populations by addressing barriers to workforce training and job opportunities for residents of disadvantaged communities and priority populations.
- Advance resilience to climate change and extreme weather events within affordable housing and disadvantaged communities through clean energy solutions such as solar, battery storage, and passive house standards.
- Advance access to clean transportation for residents of disadvantaged communities and accelerate the transition from fossil fuel to electric vehicles in EJ areas to reduce emissions and address air quality issues.
- Develop solutions and models for deploying utility-scale DER, clean transportation solutions, and energy efficiency in the built environment to reduce emissions and harmful co-pollutants for disadvantaged communities.
- Quantify and maximize health and other non-energy benefits associated with clean energy improvements in disadvantaged communities.
- Develop path for decarbonizing the State's affordable housing, including developing models for advancing beneficial electrification across the LMI market segment.



NYSERDA KEY ACTIONS FOR 2021–2024

- **Build community capacity** by supporting community-based organizations through efforts to engage residents and increase awareness of clean energy solutions, advance economic development opportunities, and facilitate input in policy and program decision-making.
 - **Ensure robust engagement opportunities** to better democratize program planning and design processes by providing a structured engagement process and financial support for stakeholders to participate in the process.
-
- **Establish an Environmental Justice Fellowship** to bring perspectives on environmental and climate justice into policy and program design and provide training opportunities for a more diverse population.
 - **Develop replicable solutions** to advance beneficial electrification across the LMI market.
 - **Develop innovative community-level interventions**, such as implementing approaches for geographic eligibility and advancing community-scale distributed energy resources such as district geothermal and community solar to benefit disadvantaged communities.
 - **Explore and advance models for community ownership** of distributed energy resources.
 - **Develop an approach for quantifying and monetizing the benefits of clean energy adoption**, including affordability, health outcomes, resilience, and beyond.
-
- **Integrate clean energy subsidies** from NYSERDA and utilities into **affordable housing finance** to advance the energy performance of these buildings and deliver co-benefits to tenants.

■ **Prioritize workforce development** and advance employment opportunities to support disadvantaged communities, transitioning underemployed and unemployed workers into the clean energy industry, while also training the next generation of entrepreneurial cleantech leaders.

■ **Develop and implement a statewide portfolio of energy efficiency** initiatives with utilities to increase the impact and reach of LMI clean energy initiatives.





ILLUSTRATIVE INITIATIVES TO ADVANCE AN INCLUSIVE CLEAN ENERGY ECONOMY BY PORTFOLIO

MARKET DEVELOPMENT / ENERGY EFFICIENCY

Clean Green Schools – funding solutions for eligible P-12 schools to reduce school energy use and assist in the conversion to carbon-free fuels

EmPower New York – no-cost and discounted efficiency solutions to income-eligible New Yorkers, helping save energy and money

Technical Assistance and Predevelopment – support for housing agencies, contractors, developers, and builders for clean energy, high-performance building, and retrofits

Beneficial Electrification for LMI and Affordable Housing – replicable solutions for heat pump adoption in the LMI and affordable housing sectors, while ensuring customer protections

Community-Based Workforce Development – community-based training partnerships between clean energy businesses, training organizations, industry associations, and un/underemployed residents in disadvantaged communities

On-the-job training for priority populations – support for clean energy businesses to hire persons from priority populations

Career Pathways Funding and Training – solicitation to train and place new entrants to the HVAC and building electrification industry

Climate Justice Corps – funding for fellows to work to improve engagement of disadvantaged communities, identify community-based, climate justice focused projects and solutions, and build capacity of local organizations to advance climate justice

NY GREEN BANK / FINANCE

Financing for Affordable Housing and Energy Efficiency in Disadvantaged Communities – new initiative using financing to catalyze clean energy within the existing capital stack for affordable housing, aiming to invest at least \$150 million in clean energy and energy efficiency solutions that benefit the State's affordable multifamily housing market

Exploring tariff-backed and other innovative, inclusive financing models – approaches to overcome LMI/disadvantaged communities finance challenges, stabilize energy costs, and improve air quality in disadvantaged communities

Partner with other agencies to explore innovative opportunities to put NY Green Bank capital to work, including new areas such as energy resiliency

Green Jobs–Green New York (GJGNY) – provides New Yorkers with access to energy assessments, installation services, low-interest financing, and pathways to training for various green-collar careers

Cultivating diverse ecosystem of investment partners and counterparties – explores funding to cover transaction costs and/or pro bono/in-kind transaction support

NY-SUN / DISTRIBUTED ENERGY RESOURCES

Solar for All – utility bill assistance program funding solar to benefit homeowners/renters unable to access solar

Affordable Multifamily Housing Incentive – PV installations serving affordable housing properties

Raise the Green Roof – pre-development support and financing for solar and efficiency deployed in Homes and Community Renewable's (HCR) affordable housing portfolio

Technical Assistance and Predevelopment – grants to address key barriers to PV and storage projects providing benefits to LMI, Environmental Justice and disadvantaged communities

Community Solar, Solar paired with Storage, and Energy Efficiency – incentive adders for community PV, projects that pair PV and energy storage and provide resiliency and/or financial benefits to LMI customers and affordable housing

Peaker Reduction and Replacement – project deployments that support the potential for solar and energy storage to repower, replace, and back-down electric generating peaker units



INNOVATION AND RESEARCH

Advanced HVAC Challenge – heating and cooling technology innovations targeting common LMI building types and needs

Innovation for Affordable Decarbonization – investments designed to reduce the cost of clean energy through optimization of the power grid, clean building technologies, and clean gas and liquid fuels

Evolving work on resilience – tools to support adaptation to climate change for all New Yorkers, including those most vulnerable

New York Clean Transportation Prizes – solutions to reduce harmful air pollution in frontline communities and create transportation “green zones”

Clean Personal Mobility Prize – innovative and high-impact approaches that enable access to clean transportation services for disadvantaged and underserved communities

Clean Medium- and Heavy-Duty Vehicle Innovation Prize – innovative and high-impact approaches to medium- and heavy-duty electrification that can be replicated at scale, including for “last-mile” solutions

LARGE-SCALE RENEWABLES

RFP Design – prioritize economic benefits to disadvantaged communities in evaluation of project bids

Agriculture, natural resources and smart siting policies – maximize co-benefits between industries and cultivate infrastructure ecologies (e.g., supporting supplemental income diversification, promoting carbon sequestration through soil enrichment, water quality improvements)

Community Benefits Agreements – support development of robust Renewable Energy Facility Host Community Benefit Program, potentially with specific callout for disadvantaged communities

Transmission planning – active participation in transmission planning to align with project development and seek important partnerships and cultivate benefits with communities

OTHER AUTHORITY-WIDE PRIORITY EFFORTS

Capacity-building and community engagement – Clean Energy Hubs to build local capacity and advance opportunities for residents within the clean energy economy; development of multilingual communication materials; providing financial support to encourage stakeholder engagement in processes; streamlining stakeholder engagement Authority-wide through equitable engagement framework

Community Ownership of Clean Energy and Distributed Energy Resources – New models for community ownership of distributed energy resources

NYSERDA Diversity, Equity, and Inclusion (DE&I) - Strategic Planning Effort to promote DE&I progress Authority-wide

Grow MWBE Contracting – NYSERDA to qualify contractors as Disadvantaged Communities, MWBE

Supporting Clean Energy Jobs and New York's Economic Recovery



LONG-TERM VISION AND VALUE PROPOSITION

New York's nation-leading climate action policies and investments have driven steady growth in the State's clean energy economy, outpacing economy-wide growth for the last three years.

However, like other sectors, the clean energy industry suffered significant job losses as a result of the pandemic, with nearly 20,000 unemployment claims from the clean energy sector in April 2020. Jobs have begun to rebound, but continued investment is needed to address current worker dislocation in the near term and build the labor capacity over the longer term to deliver clean energy solutions at the scale needed to meet Climate Act goals. The State's continued leadership and investment in its clean energy workers and businesses can and will contribute to the pandemic recovery, helping New York build back better and creating the foundation for a just transition in the decades to come, starting with prioritizing training and job placement support for individuals from disadvantaged communities.



KEY CHALLENGES/BARRIERS

- Historically marginalized populations face greater barriers to employment.
- Strains on businesses as a result of the pandemic threaten the recruitment, retention, and training of workers.
- Training partners and platforms struggle to successfully/effectively operate in a COVID-safe world, especially hands-on learning requirements.
- Public, private, and philanthropic resources are increasingly scarce, and in some cases, have constraints on how they can be used (e.g., geography, direct technical training versus wrap-around services).
- Ongoing demographic transitions and retirements require the State to entice new entrants to this energy field and ensure that training is in sync with job placement opportunities.

PRIORITY ACTIONS FOR NEW YORK

- Harness the State's clean energy investments to provide economic opportunity and quality jobs for New Yorkers, including LMI and historically disadvantaged populations.
- Support the work of the Climate Action Council and Just Transition Working Group to ensure workforce development considerations are prioritized.
- Integrate the definition of disadvantaged communities and guidance from the Climate Justice Working Group into workforce-related programs and offerings
- Advocate for climate/clean energy investments as part of State and federal stimulus efforts.

NYSERDA KEY ACTIONS FOR 2021–2024

- **Accelerate pandemic recovery** by promoting localization of clean energy workforce development and economic benefit opportunities to strengthen socio-economic resiliency in the transition to a clean energy economy, particularly in LMI and disadvantaged communities.
- **Create a Climate Justice Corps program** to place fellows working in and for disadvantaged communities to advance local climate action priorities.
- **Scale-up Career Pathways** and other successful models for direct entry in apprenticeships, pre-apprenticeships, and other job-readiness programs—focusing on efficiency and electrification, and building a talent pipeline from disadvantaged communities.
 - ▶ *See career pathways in action on the following pages.*
- **Support build-out of OSW workforce training** supporting SUNY in advancing the Offshore Wind Training Institute (OSWTI), and coordinating industry efforts already underway.
- **Focus NYSERDA's relationship with other agencies and channel partners** on workforce development and training to develop complementary offers that increase collective impact and serve a wider base of workers.
- **Pursue funding opportunities** to complement/supplement our traditional funding sources to deliver wrap-around services (such as funding for transportation, tools, daycare, etc.) to help priority populations pursue clean energy workforce opportunities.
- **Explore novel community-based investments**, including Build-Ready project development to provide workforce support alongside renewable development and leveraging DOL resources where feasible.



43

trained
to date

- 80% are expected to complete the program
- 90% of those, placed into clean energy employment or advanced education opportunities, including post-secondary degree programs and/or national certifications



Green City Force was founded to model a national Clean Energy Corps for equity and opportunity, using service as a means to connect young adults from low-income housing communities who are massively excluded from the job market to emerging jobs and career paths in energy efficiency. They are part of a national network of service and conservation corps working to connect young adults aged 18-24 to opportunity through hands-on experience and wrap-around services.

Energy Service-Learning Pre-pre-apprenticeship

Green City Force has created this essential first step for un- or underemployed young adults to enter a clean energy career pathway.

With NYSERDA's assistance, the Program will train 50 graduates of Green City Force's AmeriCorps program, recruited in partnership with the New York City Housing Authority, on electric lighting and post-construction appliances, solar panel maintenance and energy monitoring, preparing them for work on residential energy efficiency retrofits serving low- to moderate-income families.

Graduates will leave the training with a firm foundation in environmental literacy, professional certifications, and meaningful hands-on experience.

Energy Bootcamp

Green City Force is developing an Energy Bootcamp for graduates (ages 18-24) of its AmeriCorps workforce preparedness program. The training is based on a "pre-apprenticeship" framework, offering exposure, basic foundation training, and hands-on experience as well as a direct connection to industry for full-time employment.

The Energy Bootcamp recruits participants through the New York City Housing Authority and prepares them for residential energy efficiency retrofits serving low- to moderate-income families. The training includes a ROOTS for Success environmental literacy program and leads to Green Building Professional certification. Bootcamp graduates have the opportunity to move on to more advanced technical trainings and/or gain employment with Green City Force's energy service partner companies, including Franklin Energy, Ameresco, and Constellation.

** Training has been put on hold due to COVID-19 and is expected to resume in early 2021.*

Green City Force's overall goal is to develop a comprehensive model from service (pre-pre-apprenticeship phase) to Energy Boot Camp (pre-apprenticeship phase) to employment or actual union apprenticeship in the sustainable buildings sector.

pre-pre-apprenticeship



pre-apprenticeship



employment or union
apprenticeship



Building Automation Systems Training

Stacks + Joules has partnered with UA Maker Academy, South Bronx Community Charter High School, and the Lower East Side Girls Club, to prepare high school seniors from low-income communities and designated environmental justice areas for jobs in the Building Automation System (BAS) industry.

Under the project called “New Collar Careers in Green Building Automation,” Stacks + Joules will teach a cohort of students in computer programming, wireless networking, HVAC and lighting controls, and automated building control systems.

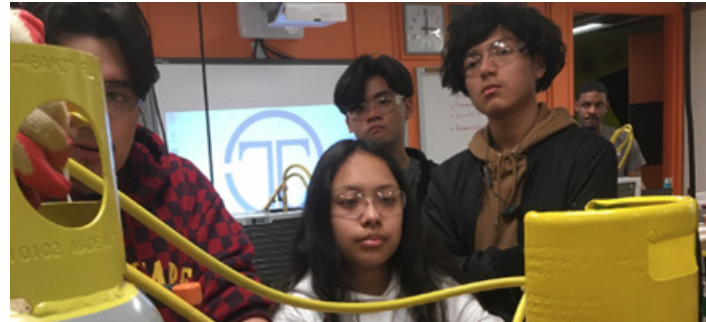
The combination of rigorous technical training, hands-on experience, and mentoring by industry professionals has a profound impact on students’ skills and enthusiasm for joining the energy efficiency workforce. This program leads to professional credentials, preparing students for careers in the energy efficiency and clean technology industry.

In the instantaneous shift to remote learning, most opportunities for hands-on learning became inaccessible. This initially had a negative impact on the students’ ability to really master their understanding of basic HVAC systems. However, in an exciting twist, the experimental approach to training had the unintended consequence of supporting an in-depth understanding of HVAC systems.

Stacks + Joules is using these lessons learned to redesign a strategically blended approach to teaching HVAC and Niagara 4 at the same time.

- 91 industry-recognized certificates earned
- 46 students secured paid internships
- 4 graduates working full time in BAS industry

61
trained
to date



“Close alignment of industry partners and schools helps create opportunities for students to experience professional working atmosphere and learn the technical skills that many employers are not able to find from current college graduates.”

— Luke Bauer, Principal UA Maker Academy

Accelerating the Transition from Natural Gas to a Low-Carbon Future



LONG-TERM VISION AND VALUE PROPOSITION

In order to realize its goals of a carbon neutral economy by mid-century, New York State needs to move away from its dependence on the combustion of natural gas (fossil fuel-derived methane) to heat homes and businesses and power industrial processes.



This pressure will be exacerbated by the on-the-ground imbalances in the near-term of demand and supply for natural gas, especially in the Downstate metropolitan area. Collectively, this transition away from natural gas to lower-carbon energy sources may be one of the most challenging pieces of our decarbonization agenda.

In the near term, we need to drive more uptake of demand-reducing solutions such as energy efficiency and electrification.

Over the longer term, we will need to scale up these solutions and advance new ones. In hard-to-electrify use-cases, the State will need to pursue R&D to prove and deploy deep decarbonization innovations to replace natural gas with alternatives with lower climate impact—such as green hydrogen, renewable natural gas, novel leak-prone pipe detection and prevention methods, and carbon capture, among others.

At the same time, the State must pay close attention to ensure the gas transition is equitable and avoids any regressive outcomes for the shrinking gas customer-base, with a focus on affordability.

KEY CHALLENGES/BARRIERS

- Significant disparity between the societal costs of natural gas (from methane and carbon dioxide) and the costs realized by consumers, resulting in a market signal that is inconsistent with New York’s public policy objectives—natural gas is plentiful, widely available, and affordable for consumers, albeit somewhat artificially so due to historical regulatory rules.
- Affordability of gas makes it favorable not just among residents for home heating and hot water, but also among the businesses and particularly industrial users, where the fuel’s ability to produce high quality, high heat for process applications is prized and where there are few or no commercially available electric solutions.
- While efficient, all-electric alternatives can fulfill most/all residential applications and many commercial ones, alternatives face several limitations, including high upfront cost, lack of awareness among consumers, lack of market infrastructure (familiar installers, marketing), and technical barriers for certain larger buildings.
- Given the affordability barriers of cleaner alternatives, the natural gas transition creates risks for regressive outcomes for those unable to move swiftly off natural gas for heating.
- The existing gas distribution system is a multibillion-dollar asset that will remain in place even as consumption/throughput is reduced, and it needs investments to be maintained to keep people safe.



PRIORITY ACTIONS FOR NEW YORK

- Update GHG accounting to match the Climate Act framework and latest state of science for global warming potential, including 20-year lifetime and upstream impacts of methane.
- Coordinate investments among utilities/agencies addressing Downstate gas supply constraints and promote adoption of clean heating and cooling alternatives.
- Build market capacity, expand product availability, and drive cost reductions in electrification solutions such as air source and ground source heat pumps, as part of NYS Clean Heat.
- Direct better gas system planning, calling for utilities to conduct improved long-term planning of their gas assets taking into account long-term State goals.
- Review natural gas policy structures to ensure that alternative heating solutions can compete on a level playing field (e.g., 100-ft. rule, long-term depreciation).
- Advance emissions recommendations for building and industrial sectors via Climate Action Council, including codes and standards aimed at driving adoption of efficient, low-carbon solutions and alternatives to fossil-fuel derived methane as a fuel for heat/industrial process.
- Take action to preserve and enhance affordability in this transition, particularly to guard against disadvantaged and LMI customers being stuck on the gas system with increasing costs.

NYSERDA KEY ACTIONS FOR 2021–2024

- **Publish long-term roadmaps** for advancing all-electric clean homes and buildings in the State consistent with the goals of a carbon-neutral economy.
- **Expand markets for clean, efficient alternatives** to reduce natural gas consumption via programmatic efforts—clean heating and cooling, energy efficiency, LMI incentives, and other efforts to make electrification a more attractive solution set for a wider range of buildings and owner/occupant combinations.
- **Illuminate and prove-out solution set for LMI/disadvantaged communities electrification**—tailored both to customer segment (keeping housing and energy costs affordable) and building stock differences (remediation, deferred maintenance, electric service upgrades, etc.)—and follow-up with investments at a larger scale via LMI implementation plan.
- **Focus on reducing cost of alternative clean heating/cooling** through innovation—demonstrate heat pump technologies (and other carbon-reducing solutions) in large commercial/multifamily buildings, working with portfolio property owners to define technical needs and performance specs, and engaging manufacturers to deliver/tailor products to meet New York’s building needs.
- **Support innovations** that reduce peak gas demand, and build understanding of, and momentum for, cutting-edge deep decarbonization technology including green hydrogen and carbon capture. Initiatives include the Carbon Foundry to support carbon-to-value R&D and technology transfer, an R&D gaps analysis for green hydrogen, and co-funding of Department of Energy hydrogen projects and initiatives.

Carbon Neutral Buildings Roadmap

A comprehensive roadmap charting New York State’s path to a carbon neutral building stock statewide by midcentury.

Building Electrification Roadmap

A complementary roadmap offering deep-dive on electrification solutions and needs, charting course for progress by 2030.

Fostering Healthy Communities



LONG-TERM VISION AND VALUE PROPOSITION

New York’s diverse communities have a critical role to play in the State’s clean energy transition.

They serve as essential partners both in the rapid expansion of clean energy generation as well as the decarbonization of society—including the built environment and the transportation and industrial sectors—thereby creating healthy, livable environments and supporting larger projects with far-reaching statewide benefits

But to succeed, we need to provide communities with the necessary tools and other resources to carry out this work. On the renewable generation side, new efforts such as the Office of Renewable Energy Siting (ORES), NYSERDA’s Build-Ready program, and the new host community benefits framework, are designed to reduce barriers for localities and overcome obstacles to mutually beneficial project development.



In order to decarbonize the State's building stock by mid-century, New York will have to quickly move beyond a building-by-building approach to a neighborhood-by-neighborhood approach, developing carbon neutral communities.

There are more than 4.5 million buildings in the New York. On a building-by-building basis, more than 400 buildings per day would need to be decarbonized for the next 30 years to cover the entire existing building stock by 2050. The State needs to build scale to succeed, and action at the community-level will be critical.

NYSERDA provides planning resources for community-scale decarbonization projects, and NYSERDA is already supporting several communities as they embark on the decarbonization transition. Integrating decarbonized transportation solutions will also be paramount in proving holistic community-scale climate solutions with neighborhood-level impact.

The disparate health and air quality impacts borne by disadvantaged communities as a result of historical and continuing environmental injustice remain front of mind, a reality that has been underscored and exacerbated by the COVID-19 pandemic. We can begin to reverse and repair these inequitable community outcomes by providing resources to disadvantaged communities to join the vanguard of the clean energy transition. Decarbonized communities will have improved outdoor air quality (e.g., through the elimination of peaker plants and on-site combustion of fossil fuels), safer and healthier buildings (through electrification, energy efficiency and measures to guard against airborne pathogens), and substantial job opportunities and increased economic activity, collectively fostering healthy communities.



KEY CHALLENGES/BARRIERS

- Communities lack resources to adequately address the many on-the-ground challenges associated with the energy transformation—from competing interest for land use and challenging siting issues, to a diverse building stock coupled with complex and evolving building codes and aging infrastructure.
- Local resource constraints have been exacerbated by COVID-19 and the resulting sharp economic downturn.
- Certain communities have a negative perception of large-scale renewable projects, and consequently are negatively disposed to the development of such projects within those communities.
- Disadvantaged communities face disparate exposure to air pollution via multiple sources (vehicle, power plant, industrial facilities) and often are burdened with a building stock that provides unhealthy indoor environmental quality.
- Health and safety benefits that result from electrification and energy efficiency projects, and other non-energy benefits resulting from community decarbonization that improve the quality of the community's indoor and outdoor spaces, are not well understood and very difficult to quantify and monetize.

PRIORITY ACTIONS FOR NEW YORK

- Continue to provide and expand upon training and technical resources to help communities prepare for responsible renewable energy development, embrace decarbonization and energy efficiency, and support progressive building codes.
- Facilitate paths for community engagement on decarbonization wherever possible, including via grants/financial support, local coordinator support, clear technical guidance and templates, recognition, and interagency coordination.
- Incorporate decarbonization into various existing State funding programs, like the Downtown and Upstate Revitalization Initiatives and other opportunities under the Consolidated Funding Application.
- Develop and establish robust framework for host community benefit agreements via DPS, clarifying local benefits and making benefits packages more compelling.
- Via the Office of Renewable Energy Siting, issue new uniform, standardized guidelines for responsible large-scale renewable siting to improve consistency, expedite approval for non-greenfield project sites, reduce burden for local intervention, and provide foresight into future project characteristics.
- Focus on turning underutilized lands, such as brownfields, landfills, and former industrial properties, into revenue-generating clean energy projects, and advance project development on other sites that present development challenges for commercial developers.
- Facilitate passage and/or implementation of proactive community-level clean energy policies such as Community Choice Aggregation (CCA), statewide benchmarking, a carbon neutral stretch code, and other codes, standards, and mandates recommended by the Climate Action Council.



NYSDERDA KEY ACTIONS FOR 2021–2024

- Site and build renewable power and distributed clean energy projects that provide community benefits.
 - ▶ **Develop new resources** to help communities and clean energy developers collaborate to design and build successful projects, such as guidance on project economics and PILOT rates for large scale renewable energy projects, and ensuring such projects deliver tangible benefits to host communities.
 - ▶ **Encourage adoption** of distributed and large-scale clean energy resources via CCAs, increasing Consolidated Funding Application the number of CCA programs where localities use 100% renewable energy as default supply.
 - ▶ **Grow local partnerships** and leverage State and federal resources to drive investment in clean energy on brownfields or otherwise underutilized land, offering support like Just Transition site reuse planning grants.
- Build local capacity and develop programs to support community-scale decarbonization.
 - ▶ **Launch new Clean Energy Communities Leadership Round**, driving and recognizing deep climate action at the local level.
 - ▶ **Establish a local Clean Energy Hub** in each economic development region of the State to build local capacity in service of developing an inclusive clean energy economy and ensuring that disadvantaged communities benefit from this economy. Clean Energy Hubs will foster multi-disciplinary partnerships between organizations to help residents meet their energy needs, advance initiatives and solutions to address local priorities, promote clean energy programs to residents and small businesses, facilitate engagement of residents and elevate input from the community into program and policy decisions, and connect residents to workforce development opportunities.
 - ▶ **Expand clean energy training** opportunities for local officials by providing accredited, on-demand, online educational courses.
 - ▶ Building on NZEED (Community Scale) and the Clean Energy Communities Leadership Round, **develop programs that provide technical and financial assistance** for communities to adopt comprehensive plans and local legislation aimed at full decarbonization, utilizing CCAs, Downtown and Upstate Revitalization Initiatives, and other Consolidated Funding Application supported programs where applicable.
 - ▶ **Directly partner with municipalities, communities, and individual landowners** to promote neighbor-to-neighbor clean energy campaigns and testimonials, fostering the sharing of best practices by local government champions for clean energy.
 - ▶ **Partner with stakeholders and Community-Based Organizations** (CBOs) in disadvantaged communities to co-develop a local clean energy agenda to identify DER deployment strategies tailored to each community, focused on reducing operation of peaker plants (where applicable) while also creating local economic opportunities, addressing environmental injustices, advancing the State’s GHG reduction goals, and boosting disadvantaged communities capacity to lead in community-scale decarbonization.
 - ▶ **Incentivize and execute demonstration projects** consistent with the DER deployment strategies identified through such geo-targeted research studies.
 - ▶ Catalyze novel clean transportation and zero-emission vehicle/mobility deployments with prize funding **supporting clean vehicles, personal mobility, and medium- and heavy-duty transformation to benefit environmental justice communities.**
- Help communities address the dual challenges of sustainability and COVID mitigation, providing building science expertise to State counterparts and local jurisdictions in ongoing response to the COVID crisis, including energy systems support to promote clean, green schools.
- Leverage funding to drive health and energy benefits, including the Healthy Homes pilot, aimed at realizing the ability to harness health dollars and avoided health/insurance costs (private and public) to facilitate/finance electrification, energy efficiency, and clean energy upgrades.

Funding Commitments

FUNDING SOURCES

Several funding sources help NYSERDA advance the State's clean energy goals and achieve its mission. NYSERDA invests these funds in a fiscally responsible manner that maximizes benefits to New Yorkers, fills critical gaps, and addresses the needs of the market.

Clean Energy Fund

Authorized by the Public Service Commission (PSC) and derived from an assessment on retail sales of electricity by State utilities — it is comprised of four portfolios: Market Development, Innovation and Research, NY-Sun, and NY Green Bank.

Clean Energy Standard

As authorized by the PSC, these funds are realized by NYSERDA through the sale of Tier 1 Renewable Energy Credits (RECs), Offshore Wind Renewable Energy Credits (ORECs), and Zero Emission Credits (ZECs) as well as receipt of Alternative Compliance Payments from New York’s Load Serving Entities (LSEs). Through PSC orders, LSEs are obligated to meet annual compliance obligations for RECs, ORECs and ZECs. As needed, utility financial backstop collections may be called on to meet funding shortfalls. These commitments are typically paid out over a 20–25 year contract term upon delivery of RECs (for Tier 1, OSW, and future Tier 4; contract terms are shorter for Tier 2 RECs and ZECs).

Regional Greenhouse Gas Initiative (RGGI)

Derived from sale of carbon emission allowances as set forth in 6 NYCRR Part 242 and 21 NYCRR Part 507. The amount of revenues available is dependent on the variable auction prices for the allowances. Per requirements in 21 NYCRR 507, RGGI funds are used to advance energy efficiency, renewable energy, and carbon abatement projects in New York State.

Other Funds

Includes sources provided by various sponsors used for specific purposes. Public funds are leveraged considerably with private sector funding through NYSERDA programs.

ANTICIPATED COMMITMENTS (APRIL 1, 2021-MARCH 31, 2024)

INVESTMENT AREAS AND PRIORITY INITIATIVES	ESTIMATED 3-YEAR INVESTMENT LEVEL	% OF TOTAL	NYSERDA MISSION OUTCOME(S) ICONS INDICATE RELEVANCE FOR PLANNED FUNDING				
			RENEWABLES	ENERGY EFFICIENCY	EMISSIONS REDUCTIONS	CLEAN ENERGY ECONOMY	DISTRIBUTED ENERGY SYSTEM
Clean Energy Standard ^{1,2,3}	\$10,416,000,000	81.8%					
Market Development	\$1,070,000,000	8.4%					
NY Green Bank	\$675,000,000	5.3%					
NY-Sun	\$373,000,000	2.9%					
Innovation and Research	\$148,000,000	1.2%					
Energy Storage	\$45,000,000	.4%					
Total	\$12,728,000,000						

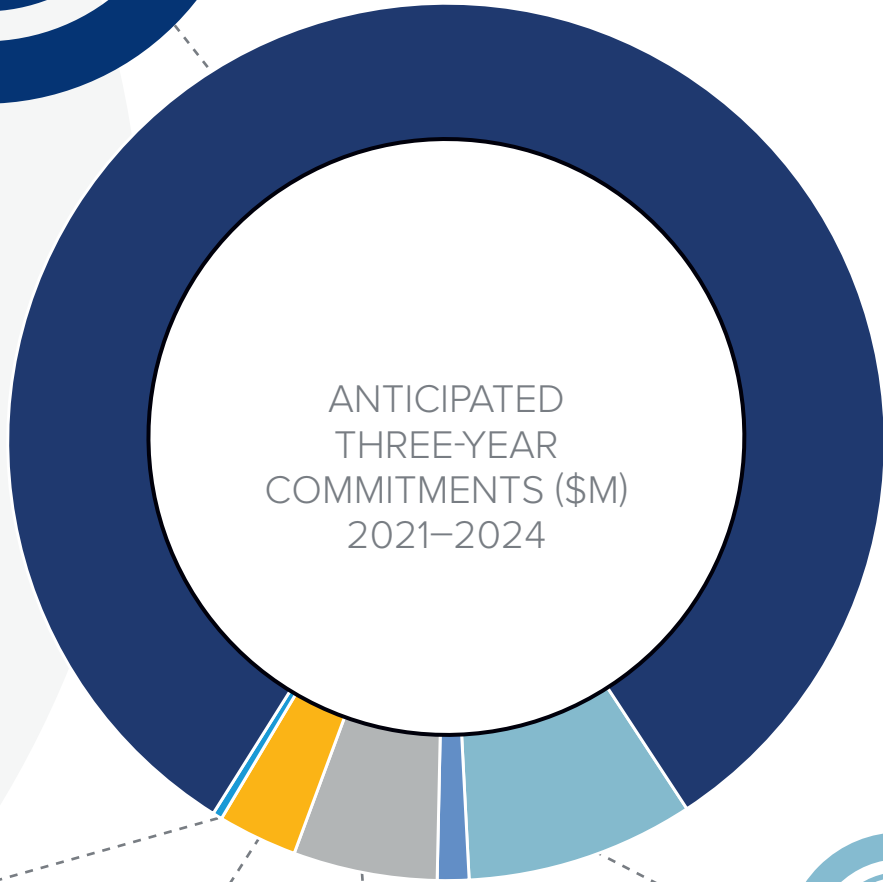
¹ Estimates of future financial commitments pertaining to Large-Scale Renewables and Offshore Wind were developed using the assumptions included in Appendix A of “White Paper on Clean Energy Standard Procurements to Implement New York’s Climate Leadership and Community Protection Act”.

² Estimates do not include the potential cost savings that could accrue from the updates to Federal renewable energy tax credits that were passed by the U.S. Congress in December 2020.

³ Financial commitments relating to potential Tier 4 procurements have not been included in this estimate. As of the publication date, the size and cost of any future Tier 4 commitments remain uncertain. The first Tier 4 Request for Proposals was recently issued in early 2021.

81.8%

Clean Energy Standard
\$10,416 M



.4%

Energy Storage
\$45 M

2.9%

NY-Sun
\$373 M

5.3%

NY Green Bank
\$675 M

1.2%

Innovation and Research
\$148 M

8.4%

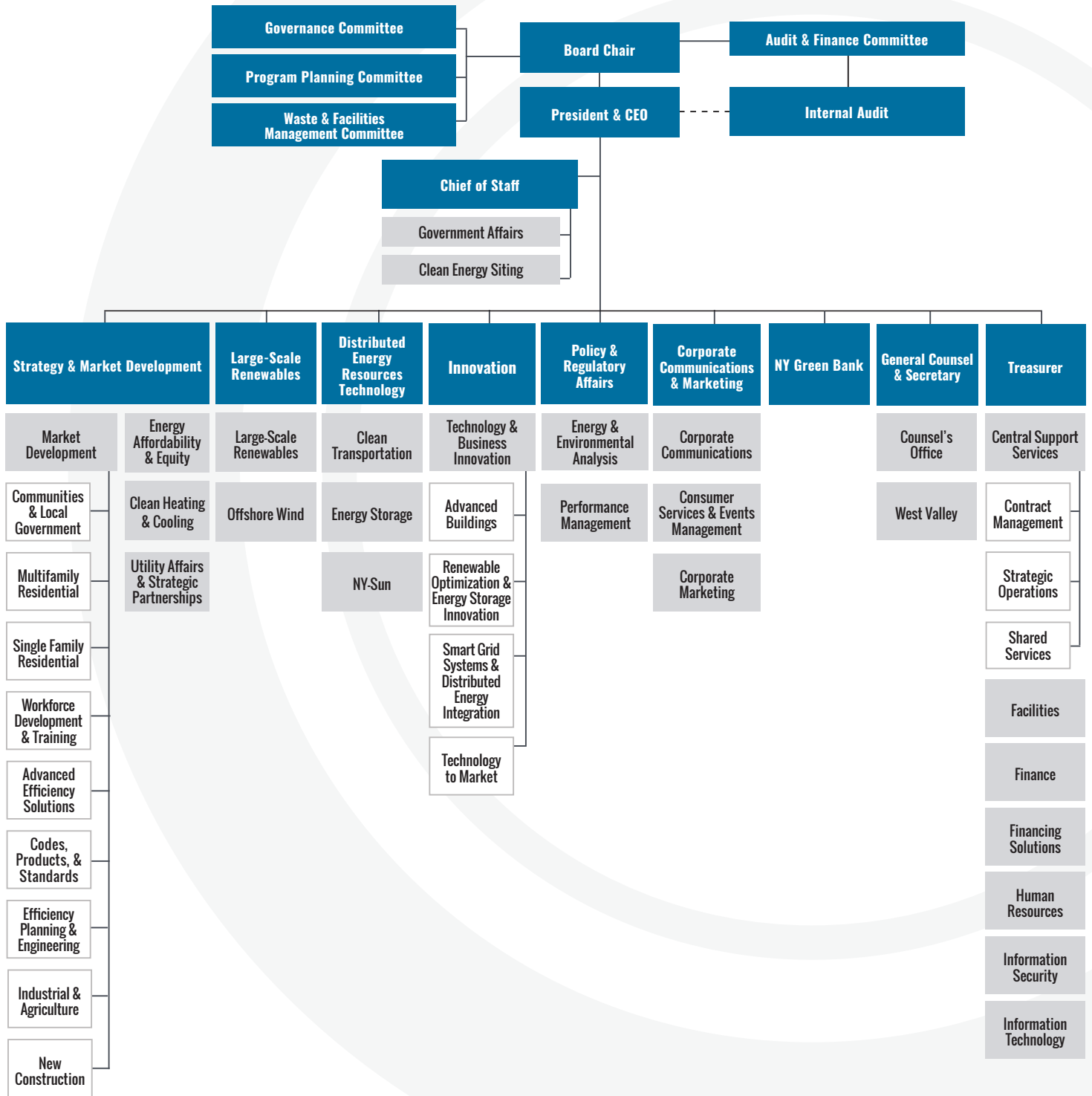
Market Development
\$1,070 M

Appendix

NYSERDA'S STRUCTURE

NYSERDA is a public benefit corporation created in 1975 under Article 8, Title 9 of the State Public Authorities Law.

NYSERDA is governed by a board consisting of 13 members, including the commissioner of the Department of Transportation, the commissioner of the New York State Department of Environmental Conservation, the chair of the New York State Public Service Commission, and the president and CEO of the New York Power Authority, who all serve ex officio. The remaining nine members are appointed by the Governor with the advice and consent of the State Senate and include, as required by statute, an engineer or research scientist, an economist, an environmentalist, a consumer advocate, an officer of a gas utility, an officer of an electric utility, and three at-large members. The board chair is designated by the Governor.



NYSERDA BOARD MEMBERS

Richard L. Kauffman

NYSERDA Chair

Sherburne B. Abbott

Vice President for Sustainability Initiatives and
University Professor of Sustainability Science and Policy, Syracuse University

Charles Bell

Programs Director, Consumers Union

Kenneth D. Daly

President, St. Thomas Aquinas College

Kate Fish

Executive Director, Adirondack North Country Association

Jay L. Koh

Managing Director and Founder, Lightsmith Group

Mark A. Willis

Senior Policy Fellow, New York University, Furman Center

Gil Quiniones

President and CEO, New York Power Authority

John B. Rhodes

Chair, New York State Public Service Commission

Basil Seggos

Commissioner, New York State Department of Environmental Conservation

Marie Therese Dominguez

Commissioner, New York State Department of Transportation

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State of New York

Andrew M. Cuomo, Governor

New York State Energy Research and Development Authority

Richard L. Kauffman, Chair | Doreen M. Harris, Acting President and CEO

Resolution No. _____

RESOLVED, that the outlook for the Authority's energy, economic environmental program priorities and strategic vision entitled *Toward a Clean Energy Future: A Strategic Outlook 2021-2024*, submitted to the Members for consideration at this meeting with such non-substantive, editorial changes and supplementary schedules as the President, in her discretion, may deem necessary or appropriate, is recommended to be adopted and approved by the Board as the Authority's updated Strategic Outlook; and

BE IT FURTHER RESOLOVED, that it is recommended that the Members of the Authority do hereby approve the Authority's Mission Statement as presented at this February 2, 2021 meeting.

New York's Regional Greenhouse Gas Initiative Operating Plan Amendment for 2021

Background

In New York, responsibility for implementing the Regional Greenhouse Gas Initiative (RGGI) is shared by the Department of Environmental Conservation (DEC) and the New York State Energy Research and Development Authority (NYSERDA). DEC and NYSERDA program responsibilities are contained in coordinated regulations:

- DEC established New York's CO2 Budget Trading Program and the State's share of the total regional cap through a rule (6 NYCRR Part 242) and revisions to an existing rule (6 NYCRR Part 200, General Provisions). Part 242 establishes the cap-and-trade provisions, as well as program compliance responsibilities and other program aspects.
- NYSERDA set up the CO2 Allowance Auction Program through regulations (21 NYCRR Part 507). Part 507 establishes administrative procedures for the auction process and provides that proceeds from the sale of the allowances will fund projects and programs for "energy efficiency, renewable or non-carbon emitting technologies, and innovative carbon emissions abatement technologies with significant carbon reduction potential, and for reasonable administrative costs incurred by the Authority."

The NYSERDA regulations include a provision to annually convene a group of stakeholders representing a broad array of energy and environmental interests. This group advises NYSERDA regarding strategies to best utilize RGGI funds. NYSERDA's RGGI Operating Plan is reviewed and revised on an annual basis. NYSERDA holds an open meeting of the stakeholder group each year, inviting input on how to achieve greater scale of implementation, advance activities that realize benefits in disadvantaged communities, expand private investments and partnerships, and address barriers to program success

The Draft 2020 Operating Plan Amendment was presented to stakeholders for comment in December 2019 and was approved by NYSERDA's Board in January 2020. The 2020 Operating Plan was then compiled based on the NYSERDA Board approval. Subsequently, certain adjustments were made to certain program funding allocations originally approved in the January 2020 Plan. Appendix 1 provides an analysis of the revenues and program funding allocations planned for the fiscal years ending March 31, 2020 as compared to actual/projected results.

This document represents the 2021 Operating Plan Amendment and provides program descriptions and funding levels for the April 2021-March 2024 timeframe.

Review of Programs and Budgets for the 2021 Operating Plan

New York State invests RGGI proceeds to support comprehensive strategies that best achieve the RGGI greenhouse gas emissions reduction goals, through energy efficiency, renewable energy, and carbon abatement strategies, pursuant to 21 NYCRR Part 507. The programs in the portfolio of initiatives are designed to support the pursuit of the State's greenhouse gas emissions reduction goals by:

- Deploying commercially available energy efficiency and renewable energy technologies;
- Building the State's capacity for long-term carbon reduction;
- Empowering New York communities to reduce carbon pollution, and transition to cleaner energy;
- Stimulating entrepreneurship and growth of clean energy and carbon abatement companies in New York; and

- Creating innovative financing to increase adoption of clean energy and carbon abatement in the State.

The initiatives described below represent program activity proposed for the 2021 Operating Plan. The 2021 Operating Plan portfolio builds on the 2020 portfolio, with an increasing focus on disadvantaged communities. The funding level for each program previously approved and the amounts planned for FY21-22 through FY23-24 are reflected in Table 1 below.

RGGI programs have and will continue, alongside other state programs, to contribute to economy-wide greenhouse gas emissions reductions and provide benefits to New York's historically overburdened and underserved communities. NYSERDA's CO₂ Allowance Auction Program regulations reflect the provision of the Climate Leadership and Community Protection Act "that 40%, and no less than 35%, of the overall benefits from the investment of the [CO₂ Allowance Auctions] proceeds" will be realized in disadvantaged communities. Appendix 2 of this Operating Plan amendment provides an indication of how RGGI program commitments through 2019 are anticipated to result in benefits for disadvantaged communities based on an interim definition of disadvantaged communities, as the Climate Justice Working Group continues its work to arrive at a long-term definition. Appendix 2 also provides an estimate of how RGGI commitments post-2019 will benefit disadvantaged communities. NYSERDA's annual budget process will examine the allocation of projected funds expected to advance this goal. NYSERDA estimates that 39% of post-2019 commitments are expected to provide benefits to disadvantaged communities, an increase from the estimate of 23% of pre-2020 portfolio commitments.

The funding allocation values represented in Table 1 provide an estimate of when funds will be assigned to each program. These figures do not reflect when funds will be spent or when contracts will be signed. The table also reflects cumulative funding allocations through FY19-20, original and revised funding allocations for FY20-21, and forecasted allocations for FY21-22 through FY23-24.

Multi-year programs that have remaining funds available for program expenditures but are not receiving additional funding under this Plan Amendment are not described below. Those programs will continue with the planned expenditure of their previously allocated funding as outlined in the 2020 RGGI Operating Plan.

For all RGGI-funded activities, NYSERDA will provide timely progress reports utilizing best practice protocols for project tracking and evaluation.

Program Descriptions

[NYPA NY-Sun Customer Incentives](#)

The NY-Sun and NYSERDA Solar Electric initiatives are driving the growth of the solar industry and making solar more affordable for all New Yorkers. The program provides declining incentives for the installation of systems and works to reduce solar project costs. RGGI funding will enable customers of the New York Power Authority (NYPA) and municipal power companies to participate in NY-Sun. The Operating Plan Amendment proposes to provide \$6 million in funding during FY20-21, \$3 million during FY21-22, and \$1 million during FY22-23.

[ChargeNY](#)

ChargeNY has been pursuing three strategies to promote plug-in electric vehicle (PEV) adoption by consumers across New York. First, NYSERDA implemented the Drive Clean rebate program for PEVs in March 2017, accelerating

purchases of PEVs by reducing higher upfront costs. Second, NYSERDA will continue to invest in marketing and awareness-building activities to build interest in PEVs among the general public. A focus on building greater public knowledge and awareness of the capabilities of PEVs is essential to spur more private investment in PEV purchases and PEV charging stations. This work may also include other market development activities, such as policy and business model development studies that support new ways for critical stakeholders, such as utilities, local governments, and car dealers, to get involved in the PEV market. Third, NYSERDA will also support the installation of PEV charging stations at workplaces, municipal lots, and multi-family buildings – location types that have been seen to be effective drivers for PEV adoption based on usage data reported from previous installations. Regions of the State that have seen faster PEV adoption will be identified for additional charging station support, which ensures investments in infrastructure support areas with the greatest potential for additional PEV drivers. ChargeNY will also initiate the deployment of a network of direct current (DC) fast charging stations across the State. This Operating Plan amendment proposes to provide additional funding of \$21.5 million in FY21-22, \$16.3 million in FY22-23, and \$15 million in FY23-24 to support continuation of current and additional ChargeNY strategies to ensure effective engagement with the market to build scale and ensure a focus on a just transition into future years.

LIPA Energy Efficiency and Renewable Energy

These funds enhance the portfolio of clean energy activities for energy consumers on Long Island, as approved by the Long Island Power Authority (LIPA) and administered by PSEG-Long Island. Funding and reporting requirements are established through a Memorandum of Understanding between NYSERDA and LIPA, which ensure that RGGI funds meet the requirements of the RGGI regulations that funds are used to support energy efficiency and clean energy activities, as well as advancing the goal of benefits of investments in disadvantaged communities. For this 3-year budget proposal, this operating plan amendment proposes to repurpose \$40 million in previously approved funds for energy storage projects on Long Island. LIPA has agreed to procure 200 megawatts of bulk storage or non-wires alternatives storage, allowing funds originally allocated for storage incentives on Long Island to be repurposed to support continuation of funding for LIPA’s energy efficiency program. NYSERDA is working with LIPA to maintain the level of market activity designed with the previous RGGI allocations. With this funding re-allocation, as well as additional funds, the Operating Plan is proposed to maintain support for LIPA-implemented energy efficiency and clean energy activity in the amount of \$20 million each year for the calendar years 2021-2023. The LIPA Board of Trustees approves an annual energy efficiency program plan, which details the activities that these funds will support.

Assisted Home Performance with ENERGY STAR

To maintain statewide access to fuel neutral, whole buildings energy efficiency opportunities, these funds will maintain support for moderate-income customers of municipal utilities (which cannot be funded through the Clean Energy Fund) to access Assisted Home Performance with ENERGY STAR as a comprehensive energy efficiency services program for existing one-to-four family homes. RGGI funding will allow the program to target customers using oil and propane for space and domestic water heating purposes. The funds will offset part of the cost for consumers to replace inefficient oil and propane heating equipment and other measures that have a direct impact on reducing oil and propane consumption (e.g., insulation, air sealing). The annual contribution proposed for FY21-22 through FY23-24 is based on current annual incentives offered for municipal utility customers.

EmPower

Similar to Assisted Home Performance with ENERGY STAR, funds to support EmPower New York, which provides energy efficiency services for low-income New Yorkers, are targeted to customers of municipal utilities heating with oil, propane, kerosene, wood or coal, but may also be applied to homes heating with natural gas, and which are also targeted to customers of municipal utilities. Measures supported by EmPower include insulation, air sealing, and heating system upgrades. The annual contribution proposed for FY21-22 through FY23-24 is based on current annual incentives offered for municipal utility customers.

Pilot Projects with Municipal Utilities

The Amendment proposes an allocation of \$1M annually over the three-year plan to develop partnerships with municipal utilities and/or rural cooperatives for innovative approaches to energy efficiency or clean energy investments that will both advance the realization of the CLCPA renewable and zero-emission electricity system goals for these systems, as well as provide insights for technology applications or clean energy market approaches that can be applied in service territories across the State. NYSERDA will work with the municipal utilities as well as other state energy agencies and authorities on valuable projects, which may include activities for low- and moderate-income energy efficiency, renewable energy integration into existing systems, battery storage applications, and other demonstrations that may help leverage funding from third-party sources and which will advance deep decarbonization for the utility systems and the state generally.

Disadvantaged Communities Schools and Buildings

The Amendment proposes an allocation of \$37.4M over the three-year plan to invest in low-carbon solutions for schools, public housing, and other buildings located within and serving disadvantaged communities. This work would build upon NYSERDA preK-12 program to provide both professional resources needed for planning and funding of demonstrations to create a model for decarbonization of schools. In addition to providing financial support for green/clean schools, the initiative would support curriculum development, workforce training, and assessments of improvements of indoor air quality associated with the building upgrades – providing a broad range of benefits to families and communities. This initiative would also fund pilots of electrification and other low-carbon solutions in affordable and public housing to drive future capital investment in proven decarbonization solutions.

Clean Energy Communities

An allocation of \$3 million annually for FY21-22 through FY23-24 will be used to support the Clean Energy Communities Leadership Round, an update to the original Clean Energy Communities program. The Leadership Round is designed to augment the overall initiative by seeking community engagement in activities that are more impactful, innovative, and sustainable over time, and provide a model of other communities in the program or for communities entering the program. In the Leadership Round, communities continue to work with regional coordinators to prioritize and implement high-impact actions, such as adoption of stretch building codes and community choice aggregation, as well as earn new forms of recognition. Allocations from this program will be applied to drive activities across the state, including for those municipalities that do not pay into the system benefits charge.

Community and Stakeholder Engagement

NYSERDA will seek to building local capacity and improve stakeholder engagement through this Amendment, which proposes \$1 million in annual funding from FY21-22 through FY23-24 to increase engagement of residents and communities, support the participation of community-based and advocacy organizations in stakeholder meetings, and supporting local projects. In 2021, NYSERDA will launch a network of Community Energy Hubs, which will build on the success of the Community Energy Engagement Program, wherein community and locally-based organizations across New York State provided outreach and education services to help low-income residents and small businesses make informed energy choices and access incentives and other resources to implement clean energy projects. The Hubs will be designed to enhance community-level engagement and capacity building by supporting clean energy concierge services. These services will be provided to residents, small businesses, nonprofits and multifamily building owners in disadvantaged and underserved communities to increase awareness and adoption of clean energy programs and solutions, with the focus of creating a more inclusive clean energy economy.

In addition, NYSERDA will help to increase the capacity of organizations to advance clean energy projects at the local level. NYSERDA will advance a pilot effort to increase the potential for community-based organizations to plan for and develop community-scale clean energy projects that can benefit disadvantaged communities with capacity development grants. Funds allocated in this operating plan will allow for statewide activities alongside efforts supported through the Clean Energy Fund.

NYSERDA will also seek to improve the ability for community-based organizations to actively participate in stakeholder engagement and process. Many local organizations often lack the resources and capacity to effectively engage on policy and initiative development, often excluding perspectives from their communities and constituents from the planning process. To ensure that community-based organizations have the resources to engage in stakeholder meetings and public comment processes, NYSERDA will allocate resources to provide stipends to offset the cost of participation as part of a pilot initiative to identify solutions for improving and increasing stakeholder engagement.

Renewable/Net Zero Energy Demonstrations

The statewide Net Zero Energy for Economic Development initiative was launched in 2019. The initiative is supporting new construction or renovation work on existing buildings that is designed to achieve net zero energy or net zero carbon performance. Eligible building types include commercial, industrial, institutional and mixed-use facilities, and project awards are also based on the ability of the project to advance the goals of the local Regional Economic Development Council Strategic Plan or State Priority Issue Area. The RGGI funds are designed to support at least one project in Long Island and is offered alongside support from the Clean Energy Fund, available for projects located in the rest of the State. This Operating Plan Amendment assumes a continued \$1 million contribution in each of the three years of the 2021 Operating Plan.

Priority Population Workforce Development

The proposed allocation of \$11 million over the three-year plan to expand access to NYSERDA's On-the-Job Training program, which provides wage subsidies to businesses that hire new workers, high efficiency HVAC and electrification career pathways training to prepare new workers for jobs, and support new initiatives to test the Pay for Success model for workforce training-outcomes, and fund fellowship positions for organizations serving disadvantaged communities. All activities will have a focus on priority populations and disadvantaged communities.

Clean Energy Fund

Through the Clean Energy Fund (CEF) and its portfolios, NYSERDA is advancing the goals of the Climate Leadership and Community Protection Act (CLCPA). As approved by the Commission, the CEF delivers on its primary goals to reduce greenhouse gas emissions, increase renewable energy generation, increase energy efficiency, and attract greater private investment in clean energy, with investment portfolios that are designed to achieve scale in clean energy markets. These key CEF objectives dovetail with the RGGI investment parameters, creating a unique opportunity to leverage CEF and RGGI funds to help achieve New York's broader CLCPA and clean energy objectives. In designing the CEF, NYSERDA originally planned to dedicate \$250 million in RGGI funds to the CEF portfolio over 10 years, supporting the \$3.42 billion Market Development and Innovation and Research activities. In designing the CEF, NYSERDA originally planned to dedicate \$250 million in RGGI funds to the CEF portfolio over 10 years, supporting the \$3.42 billion Market Development and Innovation and Research activities.

The 2020 Operating Plan advanced a plan to restore funds supporting the CEF portfolio, while also realizing annual balanced budgets. In keeping with this plan, while accounting for new revenue and commitment projections, NYSERDA will allocate to the CEF \$33.64 million in FY21-22 and \$24.11 million in FY22-23, bringing the aggregate amount committed to the CEF in line with the original schedule to dedicate \$25 million annually, and allocating \$25 million for FY23-24. Should revenues continue according to current projections, continued contributions to the CEF in future years (through 2025) will be maintained at \$25 million per year.

Green Jobs-Green New York

The Green Jobs-Green New York (GJGNY) Program, created under the Green Jobs-Green New York Act of 2009, provides New Yorkers with access to energy assessments, installation services, low interest financing, and pathways to training for various green-collar careers. The GJGNY program was originally funded with \$112 million of RGGI funds, of which \$26 million was allocated to a residential revolving loan fund to provide low interest financing for residential energy efficiency improvements, residential solar photovoltaic (PV) systems (effective April 2014), solar thermal systems, and high efficiency pellet stove heating systems through NYSERDA's Renewable Heat NY program. Interest rate changes reviewed with the GJGNY Advisory Council and effectuated in September 2016 are resulting in a reduced level of RGGI funds required to support the financing and refinancing of GJGNY loans and ensuring that RGGI funds are directed towards providing GJGNY loans to low-to-moderate income consumers and consumers who may lack access to traditional financing sources.

In June of 2020, NYSERDA launched a 0% financing loan initiative available for up to 12 months or until \$20 million in loans were approved. Demand far exceeded estimates after only 15 days. Most of these loans will be issued in FY20-21 and funded from the revolving loan fund (resulting in an increase in the funding allocation required for the program for FY20-21), with bond proceeds reimbursing funding beginning in FY21-22. The Plan includes funding totaling approximately \$48 million from FY21-22 through FY23-24 (an average of approximately \$16 million per year) for continuation of GJGNY residential financing, including making 3.49% 15-year unsecured financing available to consumers living in federal census block groups where more than 50 percent of households have household income less than 120% of area median income (and allowing consumers living outside of these communities to qualify for this rate if they meet this income threshold), and also offering access to financing for consumers who may not qualify for traditional unsecured loan underwriting criteria and meet NYSERDA's "Tier 2" underwriting criteria.

Transfer to State – Clean Energy Tax Credits

The New York State Budget for FY20-21 directed NYSERDA to transfer \$23 million in RGGI funds to the State General Fund to support clean energy tax credits. For the purpose of developing this proposed Operating Plan Amendment, NYSERDA assumes that the annual State Budget for FY21-22 through FY23-24 will include similar directives and has therefore allocated \$69 million in funding for such transfers for FY21-22 through FY23-24.

Transfer to State – Environmental Protection Fund

The New York State Budget for FY20-2021 directed NYSERDA to transfer \$5 million in RGGI funds to the Environmental Protection Fund (EPF). This operating plan assumes annual funding to support EPF programs that advance New York’s leadership in reducing greenhouse gas emissions such as Climate Smart Communities, Smart Growth, and Greenhouse Gas Management.

Anticipated Future Funding Allocations

The projected revenues and program funding allocations are presented below in Table 1. Additionally, the table presents program administration and evaluation costs, ongoing RGGI, Inc. costs, State Cost Recovery Fees, and other factors. The table below presents an increase in program administration funding, and which reflect the projected increased need to support additional activities anticipated due to new program activity. As noted, program funding allocations are equal to projected revenues on an annual basis.

Funding Assumptions

The Operating Plan for FY20-21 through FY22-23 assumes future auction revenues of \$6.82 based on the results of the most recent RGGI auction in September 2020. NYSERDA proposes to base the future revenue prices on the September auction price, rather than the December price (\$7.41), to be conservative and in the event the December auction price is not sustained over the planning period (considerably higher than the Emissions Containment Reserve price)

Table 1: Revenues and Program Funding Allocations

Category	Program	Cumulative	FY20-21	FY20-21	FY21-22	FY22-23	FY23-24	Total
		FY19-20	Original Plan	Revised				
Proceeds	Number of allowances	392,188,425	20,087,261	20,308,920	21,874,920	20,993,401	19,447,553	474,813,218
	Allowance price	\$3.33	\$5.20	\$6.70	\$6.82	\$6.82	\$6.82	\$3.93
	RGGI Auction Proceeds	1,306,349,512	104,453,755	136,141,216	149,186,951	143,174,997	132,632,308	1,867,484,984
	Interest Earnings	17,921,696	2,195,000	199,000	101,000	73,000	52,000	18,346,696
	Total Revenues	1,324,271,208	106,648,755	136,340,216	149,287,951	143,247,997	132,684,308	1,885,831,680
Renewable Energy	NY SUN NYPA Customer Incentives	20,000,000	-	6,000,000	3,000,000	1,000,000	-	30,000,000
	NY SUN Community Solar/K-solar	7,500,000	-	-	-	-	-	7,500,000
	NY SUN Long Island incentives	55,000,000	-	-	-	-	-	55,000,000
	Renewable Heat NY	10,300,083	-	-	-	-	-	10,300,083
	Advanced Renewable Energy	2,837,698	-	-	-	-	-	2,837,698
	NYS Generation Attributes Tracking System	789,933	-	-	-	-	-	789,933
	NYSERDA PV incentives	5,319,821	-	-	-	-	-	5,319,821
Energy Efficiency	Clean Energy Workforce Opportunity Program	15,000,000	-	-	-	-	-	15,000,000
	LIPA Efficiency and RE	204,600,000	25,000,000	25,000,000	20,000,000	20,000,000	20,000,000	289,600,000
	Energy Storage (LIPA territory)	52,926,434	-	(40,000,000)	-	-	-	12,926,434
	EmPower NY	27,955,148	200,000	300,000	300,000	300,000	300,000	29,155,148
	Assisted Home Performance with Energy Star	25,520,757	300,000	200,000	200,000	200,000	200,000	26,320,757
	Pilot Projects with Municipal Utilities	-	-	-	1,000,000	1,000,000	1,000,000	3,000,000
	Disadvantaged Communities Schools/Buildings	-	-	-	13,000,000	8,600,000	15,800,000	37,400,000
	Multifamily Performance Program	15,162,316	-	(115,633)	-	-	-	15,046,683
	Multifamily Carbon Emissions Reduction	5,833,019	-	-	-	-	-	5,833,019
	Solar Thermal incentive	4,342,677	-	(115,730)	-	-	-	4,226,947
	Municipal Water/Wastewater	1,245,242	-	-	-	-	-	1,245,242
	Green Residential Buildings	2,744,601	-	-	-	-	-	2,744,601
Innovative GHG Abatement Strategies	Southern Tier Competition (76 West)	11,000,000	-	-	-	-	-	11,000,000
	Brookhaven National Lab- ION Collidor	25,000,000	-	-	-	-	-	25,000,000
	Electric Vehicle/Charge NY	23,500,000	-	-	21,500,000	16,300,000	15,000,000	76,300,000
	Advanced Buildings & Industrial Innovations	14,616,038	-	(1,308,384)	-	-	-	13,307,654
	Climate Research & Analysis	8,729,380	-	(84)	-	-	-	8,729,296
	Competitive GHG Reduction Pilot	1,013,533	-	(40,883)	-	-	-	972,650
	Clean Energy Business Development	5,809,987	-	-	-	-	-	5,809,987
	Transportation Research	3,819,311	-	-	-	-	-	3,819,311
	PV Manufacturing consortium	8,500,000	-	(20,000)	-	-	-	8,480,000
	Carbon Sequestration	1,000,000	-	-	-	-	-	1,000,000
Community Clean Energy	Cleaner Greener Communities	94,261,895	-	-	-	-	-	94,261,895
	Clean Energy Communities	4,273,120	-	-	3,000,000	3,000,000	3,000,000	13,273,120
	Climate Smart Communities	7,674,999	-	-	-	-	-	7,674,999
	Community Energy Engagement	1,400,000	-	-	1,000,000	1,000,000	1,000,000	4,400,000
	Economic Development Growth Extension	5,843,047	-	-	-	-	-	5,843,047
	Energy to Lead	3,000,000	-	-	-	-	-	3,000,000
	Renewable/Net-Zero Energy Demonstrations	6,000,000	1,000,000	-	1,000,000	1,000,000	1,000,000	9,000,000
	Priority Population Workforce Development	-	-	-	2,000,000	2,000,000	7,000,000	11,000,000
	Regional Economic Development & GHG Reduction	10,289,945	-	(43,502)	-	-	-	10,246,443
CEF	Transfer to(from) Clean Energy Fund	73,790,932	16,477,887	52,338,026	33,789,264	21,331,778	25,000,000	206,250,000
Directed	NYS Environmental Tax Credits	133,000,000	23,000,000	23,000,000	23,000,000	23,000,000	23,000,000	225,000,000
	NYS Environmental Protection Fund	-	-	5,000,000	5,000,000	5,000,000	5,000,000	20,000,000
	Electric Generation Facility Cessation Mitigation/ Just Transition	30,000,000	20,000,000	20,000,000	-	-	-	50,000,000
	Green Jobs-Green NY- Original Legislation	112,000,000	-	-	-	-	-	112,000,000
	Green Jobs-Green NY- Additional Funding	105,025,275	12,000,000	37,700,000	12,000,000	18,500,000	17,518,656	190,743,931
	Transfer to Clean Energy Standard	719,424	-	-	-	-	-	719,424
	NYS Budget Transfer	90,000,000	-	-	-	-	-	90,000,000
Administration and Other Non-Program Costs	Program Administration	33,096,359	6,500,000	6,500,000	7,500,000	7,500,000	7,500,000	62,096,359
	Program Evaluation	9,155,429	-	-	-	-	-	9,155,429
	Commensurate Benefit/Litigation reserve	21,900,366	-	-	-	-	-	21,900,366
	RGGI Inc Startup Costs	1,598,204	-	-	-	-	-	1,598,204
	RGGI Inc pro-rata costs	8,358,667	1,000,000	825,000	825,000	825,000	825,000	11,658,667
	State Cost Recovery	12,817,568	1,170,868	1,121,406	1,173,687	1,101,203	1,130,668	17,344,532
	Total Funding Allocations	1,324,271,208	106,648,755	136,340,216	149,287,951	131,657,981	144,274,324	1,885,831,680
Surplus/(Shortfall)	-	-	-	-	11,590,016	(11,590,016)	-	
Cumulative Surplus(Shortfall)	-	-	-	-	11,590,016	0	-	

Note: *Totals may not sum exactly due to rounding. Fiscal years begin on April 1st and end on March 31st.

Table 2: RGGI Cash Flow

Category		Cumulative 3/31/20	FY20-21	FY21-22	FY22-23	FY23-24	Thereafter
Proceeds	Number of allowances	392,188,425	20,308,920	21,874,920	20,993,401	19,447,553	
	Allowance price	\$3.33	\$6.70	\$6.82	\$6.82	\$6.82	
	RGGI Auction Proceeds	1,306,349,512	136,141,216	149,186,951	143,174,997	132,632,308	
	Interest Earnings	17,921,697	199,000	101,000	73,000	52,000	
	Total Revenues	1,324,271,208	136,340,216	149,287,951	143,247,997	132,684,308	
Renewable Energy	NY SUN NYPA Customer Incentives	3,572,351	100,000	3,000,000	8,000,000	13,000,000	2,327,649
	NY SUN Community Solar/K-solar	1,005,741	1,082,377	1,082,377	1,082,377	1,082,377	2,164,751
	NY SUN Long Island incentives	46,784,073	2,745,754	2,735,086	2,735,087	-	-
	Renewable Heat NY	9,089,270	670,222	540,591	-	-	-
	Advanced Renewable Energy	2,837,698	-	-	-	-	-
	NYS Generation Attributes Tracking System	185,973	201,320	201,320	201,320	-	-
	NYSERDA PV incentives	5,288,571	31,250	-	-	-	-
Energy Efficiency	Clean Energy Workforce Opportunity Program	15,000,000	-	-	-	-	-
	LIPA Efficiency and RE	204,600,000	25,000,000	20,000,000	20,000,000	20,000,000	-
	Energy Storage (LIPA territory)	108,500	2,000,000	10,000,000	817,934	-	-
	EmPower NY	27,814,813	300,000	300,000	300,000	440,335	-
	Assisted Home Performance with Energy Star	25,092,507	200,000	200,000	200,000	628,250	-
	Pilot Projects with Municipal Utilities	-	-	1,000,000	1,000,000	1,000,000	-
	Disadvantaged Communities Schools/Buildings	-	-	1,300,000	12,745,000	8,109,000	-
	Multifamily Performance Program	14,583,931	300,000	162,752	-	-	-
	Multifamily Carbon Emissions Reduction	5,833,019	-	-	-	-	-
	Solar Thermal incentive	4,226,947	-	-	-	-	-
	Municipal Water/Wastewater	1,245,242	-	-	-	-	-
	Green Residential Buildings	2,744,601	-	-	-	-	-
Innovative GHG Abatement Strategies	Southern Tier Competition (76 West)	9,106,257	1,500,000	393,743	-	-	-
	Brookhaven National Lab- ION Collider	25,000,000	-	-	-	-	-
	Electric Vehicle/Charge NY	11,421,245	22,000,000	22,878,755	16,300,000	3,700,000	-
	Advanced Buildings & Industrial Innovations	10,829,772	1,962,189	515,693	-	-	-
	Climate Research & Analysis	8,289,128	440,168	-	-	-	-
	Competitive GHG Reduction Pilot	972,650	-	-	-	-	-
	Clean Energy Business Development	5,596,227	213,760	-	-	-	-
	Transportation Research	3,766,908	52,403	-	-	-	-
	PV Manufacturing consortium	8,480,000	-	-	-	-	-
Carbon Sequestration	1,000,000	-	-	-	-	-	
Community Clean Energy	Cleaner Greener Communities	69,024,957	12,196,712	8,198,634	4,263,290	578,302	-
	Clean Energy Communities	984,962	332,878	3,332,878	3,899,545	3,899,545	823,313
	Climate Smart Communities	4,983,020	538,395	538,395	538,395	538,395	538,399
	Community Energy Engagement	324,092	671,876	1,404,032	1,000,000	1,000,000	-
	Economic Development Growth Extension	5,562,723	-	280,324	-	-	-
	Energy to Lead	1,796,977	300,000	300,000	300,000	303,023	-
	Renewable/Net-Zero Energy Demonstrations	3,000,000	4,000,000	-	1,000,000	1,000,000	-
	Priority Population Workforce Development	-	-	2,000,000	2,000,000	7,000,000	-
Regional Economic Development & GHG Reduction	9,763,011	483,432	-	-	-	-	
Clean Energy Fund	Transfer to Clean Energy Fund	73,790,932	52,338,026	33,789,264	21,331,778	25,000,000	-
	Transfer to NY Green Bank	-	-	-	-	-	-
Directed	NYS Environmental Tax Credits	133,000,000	23,000,000	23,000,000	23,000,000	23,000,000	-
	NYS Environmental Protection Fund	-	5,000,000	5,000,000	5,000,000	5,000,000	-
	Electric Generation Facility Cessation Mitigation	30,000,000	16,666,667	1,666,667	1,666,666	-	-
	Green Jobs-Green NY- Original Legislation	112,000,000	-	-	-	-	-
	Green Jobs-Green NY- Additional Funding	105,025,275	37,700,000	12,000,000	18,500,000	17,518,656	-
	Transfer to Clean Energy Standard	719,424	-	-	-	-	-
	NYS Budget Transfer	90,000,000	-	-	-	-	-
NYS Temporary Budget Transfer	5,679,455	(3,786,304)	(1,262,101)	(631,050)	-	-	
Administration and Other Non-Program Costs	Program Administration	33,076,133	6,520,226	7,500,000	7,500,000	7,500,000	-
	Program Evaluation	5,967,402	1,594,014	1,594,013	-	-	-
	Commensurate Benefit/Litigation reserve	21,900,366	-	-	-	-	-
	RGGI Inc Startup Costs	1,598,204	-	-	-	-	-
	RGGI Inc pro-rata costs	8,358,667	825,000	825,000	825,000	825,000	-
	State Cost Recovery	12,756,080.00	1,121,406	1,173,687	1,101,203	917,855	274,301
Total Expenses	1,183,787,104	218,301,771	165,651,110	154,676,545	142,040,738	318,091,696	
Cash Increase/(Decrease)	140,484,104	(81,961,555)	(16,363,159)	(11,428,548)	(9,356,430)	(42,159,391)	
Cash Balance	140,484,104	58,522,550	42,159,391	30,730,843	21,374,413	-	

Note: *Totals may not sum exactly due to rounding. Fiscal years begin on April 1st and end on March 31st

Appendix 1
January 2020 Operating Plan Revenues and Program Funding Allocations Compared to
Actuals/Projections

Category	Program	FY19-20 Budget (rev Jun2019)	FY19-20 Actual
Proceeds	Number of allowances	20,298,765	20,298,765
	Allowance price	\$5.62	\$5.52
	RGGI Auction Proceeds	114,079,059	112,023,819
	Interest Earnings	2,779,000	2,756,894
	Total Revenues	116,858,059	114,780,713
Renewable Energy	NY SUN NYPA Customer Incentives	-	-
	NY SUN Community Solar/K-solar	-	-
	NY SUN Long Island incentives	-	-
	Renewable Heat NY	-	-
	Advanced Renewable Energy	-	-
	NYS Generation Attributes Tracking System	-	-
Energy Efficiency	NYSERDA PV incentives	-	-
	Clean Energy Workforce Opportunity Program	-	-
	LIPA Efficiency and RE	25,000,000	25,000,000
	Energy Storage (LIPA territory)	52,926,434	52,926,434
	EmPower NY	200,000	200,000
	Assisted Home Performance with Energy Star	300,000	300,000
	Pilot Projects with Municipal Utilities	-	-
	Disadvantaged Communities Schools/Buildings	-	-
	Multifamily Performance Program	(51,174)	(51,174)
	Multifamily Carbon Emissions Reduction	(2)	(2)
Innovative GHG Abatement Strategies	Solar Thermal incentive	-	-
	Municipal Water/Wastewater	-	-
	Green Residential Buildings	-	-
	Southern Tier Competition (76 West)	-	-
	Brookhaven National Lab- ION Collidor	-	-
	Electric Vehicle/Charge NY	5,000,000	-
	Advanced Buildings & Industrial Innovations	(198)	(198)
	Climate Research & Analysis	(6,533)	(6,533)
	Competitive GHG Reduction Pilot	-	-
Clean Energy Business Development	-	-	
Community Clean Energy	Transportation Research	(15,050)	(15,050)
	PV Manufacturing consortium	-	-
	Carbon Sequestration	-	-
	Cleaner Greener Communities	(1,132,660)	(4,420,042)
	Clean Energy Communities	-	1,700,000
	Climate Smart Communities	-	-
	Community Energy Engagement	-	-
	Economic Development Growth Extension	-	-
CEF	Energy to Lead	-	-
	Renewable/Net-Zero Energy Demonstrations	4,000,000	6,000,000
Directed	Priority Population Workforce Development	-	-
	Regional Economic Development & GHG Reduction	-	-
	Transfer to(from) Clean Energy Fund	4,454,010	17,509,699
	NYS Environmental Tax Credits	23,000,000	23,000,000
	NYS Environmental Protection Fund	-	-
	Electric Generation Facility Cessation Mitigation/ Just Transition	-	-
	Green Jobs-Green NY- Original Legislation	-	-
Green Jobs-Green NY- Additional Funding	12,400,000	10,400,000	
Administration and Other Non-Program Costs	Transfer to Clean Energy Standard	-	-
	NYS Budget Transfer	-	-
	Program Administration	2,232,436	2,232,436
	Program Evaluation	-	-
	Commensurate Benefit/Litigation reserve	-	-
	RGGI Inc Startup Costs	-	-
Total Funding Allocations	RGGI Inc pro-rata costs	829,257	441,876
	State Cost Recovery	1,035,371	877,100
	Total Funding Allocations	77,245,457	83,168,112
	Surplus/(Shortfall)	39,612,602	31,612,602
Cumulative Surplus(Shortfall)	8,000,000	-	

Appendix 2 RGGI Commitments Benefiting Disadvantaged Communities

Category	Program	Estimated LMI/ Disadvantaged Community			SUBJECT TO CLCPA Estimated LMI/ Disadvantaged Community			Total	
		Cumulative Commitments 12/31/19	Benefit	%	Post-2019 Commitments	Benefit	%		
SUBJECT TO CLCPA	Renewable Energy	NY SUN NYPA Customer Incentives	9,706,046	3,397,116	35%	20,293,954	7,102,884	35%	30,000,000
		NY SUN Community Solar/K-solar	1,249,272	-	0%	6,250,728	-	0%	7,500,000
		NY SUN Long Island incentives	51,200,565	-	0%	3,799,435	-	0%	55,000,000
		Renewable Heat NY	9,634,826	-	0%	665,257	-	0%	10,300,083
		Advanced Renewable Energy	2,837,698	-	0%	-	-	0%	2,837,698
		NYS Generation Attributes Tracking System	789,933	-	0%	-	-	0%	789,933
		NYSERDA PV incentives	5,319,821	-	0%	-	-	0%	5,319,821
	Energy Efficiency	Clean Energy Workforce Opportunity Program	15,000,000	-	0%	-	-	0%	15,000,000
		LIPA Efficiency and RE	204,600,000	61,380,000	30%	85,000,000	25,500,000	30%	289,600,000
		Energy Storage	301,575	-	0%	12,624,859	-	0%	12,926,434
		EmPower NY	27,783,474	27,783,474	100%	1,371,674	1,371,674	100%	29,155,148
		Assisted Home Performance with Energy Star	25,074,497	25,074,497	100%	1,246,260	1,246,260	100%	26,320,757
		Pilot Projects with Municipal Utilities	-	-	-	3,000,000	1,050,000	35%	3,000,000
		Disadvantaged Communities Schools/Buildings	-	-	-	37,400,000	37,400,000	100%	37,400,000
		Multifamily Performance Program	15,046,683	-	0%	-	-	0%	15,046,683
		Multifamily Carbon Emissions Reduction	5,833,019	-	0%	-	-	0%	5,833,019
		Solar Thermal incentive	4,226,947	-	0%	-	-	0%	4,226,947
		Municipal Water/Wastewater	1,245,242	-	0%	-	-	0%	1,245,242
	Green Residential Buildings	2,744,601	-	0%	-	-	0%	2,744,601	
	Innovative GHG Abatement Strategies	Southern Tier Competition (76 West)	10,262,850	-	0%	737,150	-	0%	11,000,000
		Brookhaven National Lab- ION Collidor	25,000,000	-	0%	-	-	0%	25,000,000
		Electric Vehicle/Charge NY	11,188,399	-	0%	65,111,601	9,766,740	15%	76,300,000
		Advanced Buildings & Industrial Innovations	13,307,654	-	0%	-	-	0%	13,307,654
		Climate Research & Analysis	8,729,296	-	0%	-	-	0%	8,729,296
		Competitive GHG Reduction Pilot	972,650	-	0%	-	-	0%	972,650
		Clean Energy Business Development	5,809,987	-	0%	-	-	0%	5,809,987
		Transportation Research	3,819,311	-	0%	-	-	0%	3,819,311
PV Manufacturing consortium		8,480,000	-	0%	-	-	0%	8,480,000	
Carbon Sequestration		1,000,000	-	0%	-	-	0%	1,000,000	
Community Clean Energy	Cleaner Greener Communities	94,261,895	-	0%	-	-	0%	94,261,895	
	Clean Energy Communities	2,086,963	-	0%	11,186,157	3,600,000	32%	13,273,120	
	Climate Smart Communities	5,321,157	-	0%	2,353,842	-	0%	7,674,999	
	Community Energy Engagement	675,730	-	0%	3,724,270	3,000,000	81%	4,400,000	
	Economic Development Growth Extension	5,562,723	-	0%	280,324	-	0%	5,843,047	
	Energy to Lead	3,000,000	-	0%	-	-	0%	3,000,000	
	Renewable/Net-Zero Energy Demonstrations	3,000,000	-	0%	6,000,000	-	0%	9,000,000	
	Priority Population Workforce Development	-	-	-	11,000,000	7,150,000	65%	11,000,000	
Regional Economic Development & GHG Reduction	10,246,443	-	0%	-	-	0%	10,246,443		
Directed	NYS Environmental Tax Credits	133,000,000	19,950,000	15%	92,000,000	13,800,000	15%	225,000,000	
	NYS Environmental Protection Fund	-	-	-	20,000,000	7,000,000	35%	20,000,000	
	Elec Generation Facility Cessation Mitigation/Just Transition	30,000,000	30,000,000	100%	20,000,000	20,000,000	100%	50,000,000	
	Green Jobs-Green NY- Original Legislation	112,000,000	39,200,000	35%	-	-	0%	112,000,000	
	Green Jobs-Green NY- Additional Funding	105,025,275	36,758,846	35%	85,718,656	53,401,530	62%	190,743,931	
	Transfer to Clean Energy Standard	719,424	-	0%	-	-	0%	719,424	
	NYS Budget Transfer	90,000,000	-	0%	-	-	0%	90,000,000	
SUBTOTAL	1,066,063,956	243,543,933	23%	489,764,167	191,389,088	39%	1,555,828,123		
Excluded	Administration and Other Non-Program Costs	CEP	73,790,932	-	-	132,459,068	-	-	206,250,000
		Transfer to/from Clean Energy Fund	31,931,071	-	-	30,165,288	-	-	62,096,359
		Program Administration	5,999,519	-	-	3,155,910	-	-	9,155,429
		Program Evaluation	21,900,366	-	-	-	-	-	21,900,366
		Commensurate Benefit/Litigation reserve	1,598,204	-	-	-	-	-	1,598,204
		RGGI Inc Startup Costs	7,746,048	-	-	3,912,619	-	-	11,658,667
		RGGI Inc pro-rata costs	12,606,619	-	-	4,737,913	-	-	17,344,532
SUBTOTAL	155,572,759	-	-	174,430,798	-	-	330,003,557		
TOTAL	1,221,636,715			664,194,965			1,885,831,680		

Resolution No. _____

RESOLVED, that revisions to the “Operating Plan for Investments in New York Under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Program” as presented to the Members for consideration at this February 2, 2021 meeting, with such non-substantive, editorial changes and supplementary schedules as the Acting President and Chief Executive Officer, in her discretion, may deem necessary or appropriate, are recommended for approval;

AND BE IT FURTHER RESOLVED, that the Members direct the Acting President and Chief Executive Officer to develop a revised operating plan incorporating such revisions as soon as reasonably possible.

DRAFT

New York State Energy Research and Development Authority

Fiscal Year 2021-22 Budget and Financial Plan

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CERTIFICATION

DRAFT

I hereby certify that, to the best of my knowledge and belief after reasonable inquiry, the budget information contained herein for the fiscal year ending March 31, 2022 has been developed based on reasonable assumptions and methods of estimation.

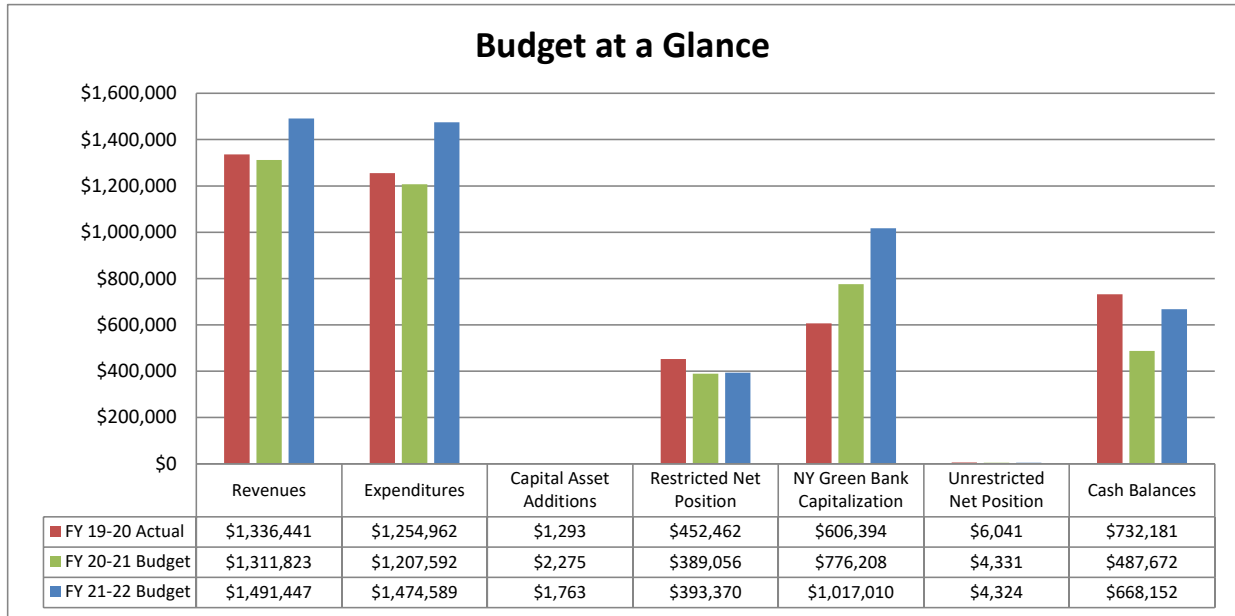


Doreen M. Harris
Acting President and Chief Executive Officer



Jeffrey J. Pitkin
Treasurer and Chief Financial Officer

Budget FY 2021-22
(Amounts in thousands)



INTRODUCTION

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation established in 1975 pursuant to Title 9 of Article 8 of the Public Authorities Law of the State of New York. NYSERDA is a component unit of the State of New York and, as such, the results of operation are reported in the State of New York's Comprehensive Annual Financial Report.

The Budget for the fiscal year ending March 31, 2022 (FY 2021-22), and the Financial Plan for FY's 2022-23 to 2024-25 were prepared in accordance with accounting principles generally accepted in the United States of America.

PROGRAM SUMMARY

Following is a summary of the functions/activities included in the Budget:

Clean Energy Fund (CEF)

Pursuant to a January 2016 Order (CEF Order), the Public Service Commission (PSC) authorized a ten-year commitment through 2025 of approximately \$5.322 billion to clean energy programs through a CEF. The CEF is designed to meet four primary objectives: greenhouse gas emission reductions; energy affordability; statewide penetration and scale of energy efficiency and clean energy generation; and growth in the State's clean energy economy.

The CEF Order provided for a ten-year funding authorization of \$3.43 billion for the Market Development and Innovation & Research activities, and also provided for additional funding authorization of \$781.5 million for the NY Green Bank, \$960.6 million for NY-Sun, and \$150 million for the Renewable Portfolio Standard Program for a 2016 Main Tier solicitation. The NY-Sun and NY Green Bank programs are presented as separate Programs/Functions in the budget document as further described below.

Market Development and Innovation & Research

The CEF Market Development activities are designed to reduce costs, accelerate customer demand, and increase private investment for energy efficiency and other behind-the-meter clean energy solutions through strategies including financial support, technical knowledge, data, education to customers and service providers, and advanced workforce training. The CEF Innovation & Research activities are designed to invest in cutting-edge technologies that will meet increasing demand for clean energy including: smart grid technology, renewables and distributed energy resources, high performance buildings, transportation, and clean tech startup and innovation development.

NY-Sun

Approved through a 2012 PSC Order, the NY-Sun program is designed to develop a sustainable and subsidy-free solar electric industry through a megawatt block approach. The NY-Sun program was initially funded through \$216 million reallocated under the RPS program; as a result, certain expenditures for the NY-Sun program are included in the RPS program in the budget. The CEF Order established the incremental collection schedule by utilities and reallocation of NYSERDA clean energy uncommitted funds to support program activities approved through the 2012 Order. A May 2020 Order was approved by the PSC to increase the NY-Sun funding level by \$573 million to expand the capacity target from 3 GW by 2023 to 6 GW by 2025.

NY Green Bank

The key elements of NY Green Bank's mission are collaborating with private sector participants, implementing structures that overcome barriers and address gaps in current clean energy financing markets, and transforming those markets by enabling greater scale, new and expanded asset classes and liquidity. These factors combined have the objectives to motivate faster and more extensive implementation of clean energy assets within New York State, foster greater energy choices, reduce environmental impacts and accrue more green energy advantages per public dollar spent for the benefit of all New Yorkers.

NY Green Bank's initial capitalization was established from \$315.6 million in uncommitted utility surcharge assessment funds and \$52.9 million from RGGI revenues (which was subsequently redeemed to support NYSERDA's statewide energy storage initiative). As discussed above, the CEF Order authorized incremental collections for the remaining \$631.5 million of NY Green Bank's capitalization.

Clean Energy Standard (CES)

Pursuant to an August 2016 and subsequent Orders, the Clean Energy Standard was established adopting a State Energy Plan goal that 50% of New York's electricity is to be generated by renewable sources by 2030, as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030. The mandated actions are divided into two categories, a Renewable Energy Standard (RES) and a Zero-Emissions Credit (ZEC) requirement. The RES directs NYSERDA to procure renewable energy credits from renewable energy generation from qualifying facilities through competitively selected long-term contracts, and to offer such credits for periodic sale to Load Serving Entities (LSE) to meet their obligations to serve their retail customers through the procurement of a minimum percentage of qualifying renewable energy credits. The RES also includes an obligation on distribution utilities on behalf of all retail customers to continue to invest in the maintenance of existing at-risk renewable generation attributes and a program to maximize the value potential of new offshore wind resources. The ZEC requirement consists of an obligation for NYSERDA to provide payments to certain nuclear generation facilities for the production of zero-emissions attributes from such facilities, funded from monthly installment payments collected from LSEs for their proportionate share of such attributes to serve their retail customers evidenced by the procurement of qualifying zero emission credits. In October 2020 the PSC approved an Order adopting modifications to the Clean Energy Standard to implement New York's Climate Leadership and Community Protection Act. The Order allows for a continuation of Tier 1 solicitations to ensure that 70% of the load in 2030 is served by renewable resources, NYSERDA will create a new competitive Tier 2 program to ensure the continued availability of legacy baseline resources to meet the State's renewable energy goals, NYSERDA will also create a new competitive Tier 4 program to increase penetration of renewable energy in New York City and reducing reliance on fossil fuel usage, and NYSERDA will continue to conduct annual offshore wind solicitations to achieve the statewide goal of 9 GW by 2035.

Regional Greenhouse Gas Initiative (RGGI)

The Regional Greenhouse Gas Initiative, or RGGI, is an agreement among nine Northeastern and Mid-Atlantic States to reduce greenhouse gas emissions from power plants. The RGGI states (Participating States) have committed to cap and then reduce the amount of carbon dioxide that certain power plants are allowed to emit, limiting the region's total contribution to atmospheric greenhouse gas levels. The Participating States have agreed to implement RGGI through a regional cap-and-trade program whereby the Participating States have agreed to auction annual

regional emissions. Rules and regulations promulgated by the NYS Department of Environmental Conservation (DEC) call for NYSERDA to administer periodic auctions for annual emissions. Pursuant to these regulations, the proceeds will be used by NYSERDA to administer energy efficiency, renewable energy, and/or innovative carbon abatement programs, and to cover the costs to administer such programs.

West Valley

NYSERDA manages, on behalf of the State, the Western New York Nuclear Service Center (West Valley), which is the site of a former plant for reprocessing used nuclear fuel. Through 1972, the former plant operator, Nuclear Fuel Services, Inc., generated as a by-product of its reprocessing operations, more than 600,000 gallons of liquid, high-level radioactive waste, which were stored at the site. In 1980, Congress enacted the West Valley Demonstration Project Act (West Valley Act). Pursuant to the West Valley Act, the U.S. Department of Energy (DOE) is carrying out a demonstration project to: (1) solidify the liquid high-level radioactive waste at West Valley; (2) transport the solidified waste to a permanent federal repository; and (3) decontaminate and decommission the reprocessing plant and the facilities, materials, and hardware used in the project. NYSERDA and the Federal government share the combined expenses incurred for this program.

NYSERDA also maintains, on behalf of the State, the State-Licensed Disposal Area (SDA), which is a shut-down commercial low-level radioactive waste disposal facility at West Valley. NYSERDA is evaluating how to remediate and close this facility in accordance with regulatory requirements.

Energy and Environmental Analysis

Through this program, NYSERDA provides objective and credible analyses of energy issues to various stakeholders. The program also includes activities for energy-related emergency planning and response, and support for State energy planning functions.

NYSERDA is also responsible for coordination of nuclear material matters, including serving as the State liaison with the Nuclear Regulatory Commission.

These activities are primarily funded through an assessment authorized under Section 18-a of Public Service Law and a Federal State Energy Plan grant.

Pursuant to the State Low-Level Radioactive Waste (LLRW) Management Act of 1986, NYSERDA is responsible for collecting information and providing regular reports to the Governor and Legislature on LLRW generation in the State. These activities are funded with a State appropriation sub-allocated from an appropriation provided to the NYS Department of Health, which is funded through an assessment collected on operating nuclear power plant licensees.

Other

Other programs represent an aggregate of smaller programs/functions. These activities are primarily funded through Commission Orders, Memorandum of Understanding with various utilities pursuant to Commission Orders, various third-party reimbursements, federal energy grants, State appropriations and assessments authorized under Section 18-a of the Public Service Law.

BUDGETARY ASSUMPTIONS

The following are the principal budget assumptions used in developing the Budget and Financial Plan:

- The CEF Order established a “Bill-As-You-Go” approach for revenue collection effective January 1, 2016. Under this approach, incremental CEF ratepayer collections and the previously approved collections for New York Energy Smart, Technology and Market Development, and Renewable Portfolio Standard programs not yet paid to NYSERDA, will be held by the electric and gas utilities and used to reimburse NYSERDA for actual CEF program expenses and NY Green Bank committed capital through a monthly reimbursement process, provided that the reimbursement allows NYSERDA to maintain a sufficient cash balance based on projected expenses for the subsequent two-month period, subject to the utilities’ unremitted collection balances approved in the CEF Order. Utility surcharge assessments revenue is based on anticipated expenditures and NY Green Bank committed capital, prior fiscal year projected cash balances, and the resulting collections projected to maintain working capital pursuant to this approach.
- NY Green Bank loan interest and fees are based on estimates of committed and deployed capital.
- Allowance auction proceeds for the Regional Greenhouse Gas Initiative (RGGI) are based on the allowance price realized in the September 2020 auction .
- West Valley’s State appropriation revenue for FY 2021-22 through FY 2024-25 is based primarily on the State’s 10% share of West Valley Demonstration Project costs and the State’s share under the Consent Decree. These estimates assume future U.S. Department of Energy (DOE) annual funding of approximately \$92.4 million for FY 2021-22 through FY 2024-25, for its share of project costs.
- Interest income is based on assumed balances available for investment and based on a one-year U.S. Treasury bond index yield.
- GJGNY budgeted loan interest income assumes additional loans to be issued during FY 2021-22 of up to \$32.3 million based on current loan origination volume.
- Salary costs for current staff and funded vacant positions expected to be filled are based on salary grades equivalent to the State Management/Confidential (M/C) employees. Salaries include a 2% cost-of-living-adjustment which was originally scheduled effective April 1, 2020, but has not yet been authorized by the State. The increase, if approved by NYS, will be in accordance with increases granted for M/C employees. No retroactive salary costs for FY 20-21 have been budgeted as it is uncertain whether a retroactive component will occur but would be paid out if authorized by NYS. Salaries also include performance-based salary increases and payments comparable to those which may be authorized for state employees.
- Fringe benefit costs are generally based on prior year actual costs as a percentage of salary costs. Due to market declines in March of 2020, NYSERDA’s actuarially-determined pension expense allocated from the NYS Retirement System increased by \$4.2 million in FY 2019-20 to \$9.0 million for FY 2020-21. Since the market has rebounded from the March 2020 decline, NYSERDA anticipates next year’s actuarially-determined pension expense to decrease, and possibly return to previous levels, but the actuarial calculation is dependent upon multiple conditions/assumptions at a particular point in time (March 31, 2021). The FY 2021-22 assumption of \$6.7 million is an average of the past two years to be conservative. The OPEB expense under Governmental Accounting Standards Board Statement No. 75 in the FY 2021-22 Budget is based on preliminary actuarial estimates calculated, but the final amount may differ once a final actuarial calculation is prepared.

- The NYS Cost Recovery Fee represents the fee paid to the State under Section 2975 of the Public Authorities Law (Governmental Cost Recovery System) for general governmental services. The FY 2020-21 Budget assumes that NYSERDA's assessment will be \$12.7 million, which is based on the prior year assessed value.
- The Budget includes no significant or non-recurring revenue-enhancement or cost-reduction initiatives which shift resources from one year to another.

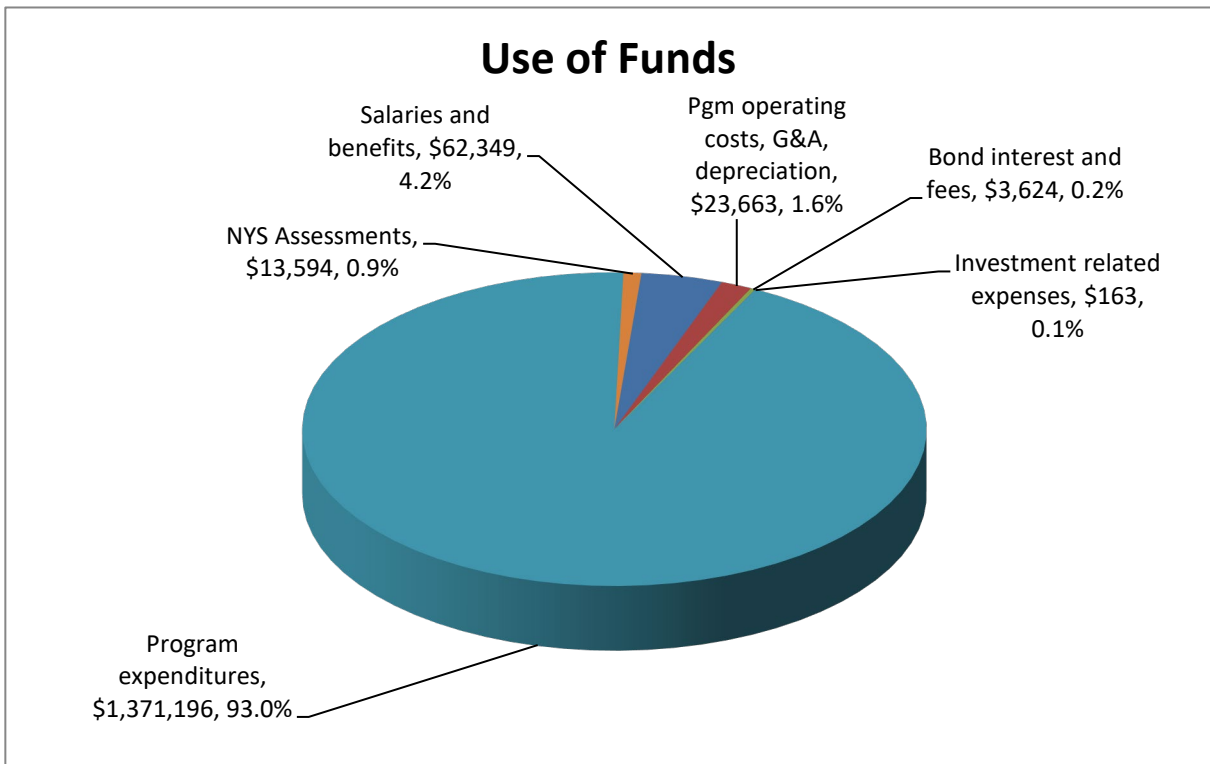
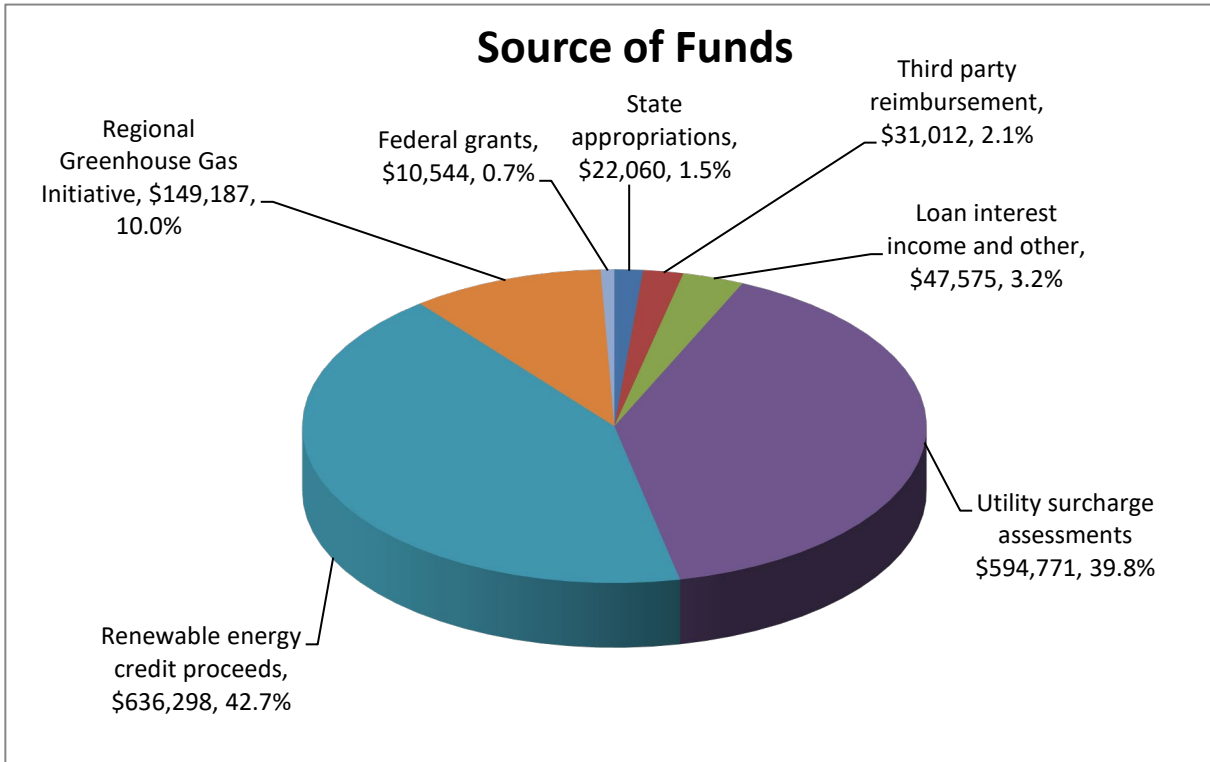
BUDGETARY RISKS

The following is a summary of significant budgeting risks:

- NYSERDA's budgeting process is subject to inherent risks regarding the ability to accurately forecast revenues and expenditures.
- Over the past several years, NYSERDA has assumed responsibility for administering certain new programs, and additional program responsibilities may be added during FY 2021-22 that have not been included in the Budget.
- Revenues resulting from auctions of allowances under the Regional Greenhouse Gas Initiative (RGGI) have shown some volatility over the past few years. NYSERDA has developed a multi-year program planning approach for these revenues, but variations in actual proceeds realized makes it difficult to complete accurate long-term planning.
- Program expenditures for most programs are funded with revenues which are generally received in advance of expenditures. Under the modified accrual basis of accounting, these funds are recorded as revenue when received, with any unexpended funds recorded as Restricted Net Position. Timing of program activity may result in either: (1) revenues exceeding expenses during the Budget period; or (2) expenditures funded in part, by unexpended revenues from prior fiscal periods. It is anticipated that under the CEF BAYG approach NYSERDA will see more consistency in recording revenues in the same time period that expenditures are incurred.
- Expenditures for the West Valley program are based primarily on the amount anticipated to meet the State's share of costs for West Valley under the Cooperative Agreement and the Consent Decree which are dependent upon funds provided in the federal budget to the U.S. Department of Energy (DOE).
- Although DOE and NYSERDA have reached agreement on the allocation of costs (percentages) to be paid by each entity for remediating the West Valley site, the remedial action decisions for several significant facilities will not be finalized prior to 2023. In addition, DOE has taken the position that State will be responsible for waste disposal fees when high level waste on-site reaches an ultimate repository destination, a figure to be calculated at the time of disposal pursuant to the Nuclear Waste Policy Act, 42 U.S.C. 10101 et seq. The agreement between the parties left this issue unresolved, as no national repository option will be in place for many years. Although NYSERDA has advanced, and will continue to advance, legal arguments as to why this responsibility is not one that rightfully falls on the State, additional State funding may be required once the issue is resolved.
- Pension costs and retirement health insurance costs are based on actuarial valuations, and such valuations could be impacted by a number of assumptions, general economic conditions, and future events which could lead to variances from estimated annual expenses.

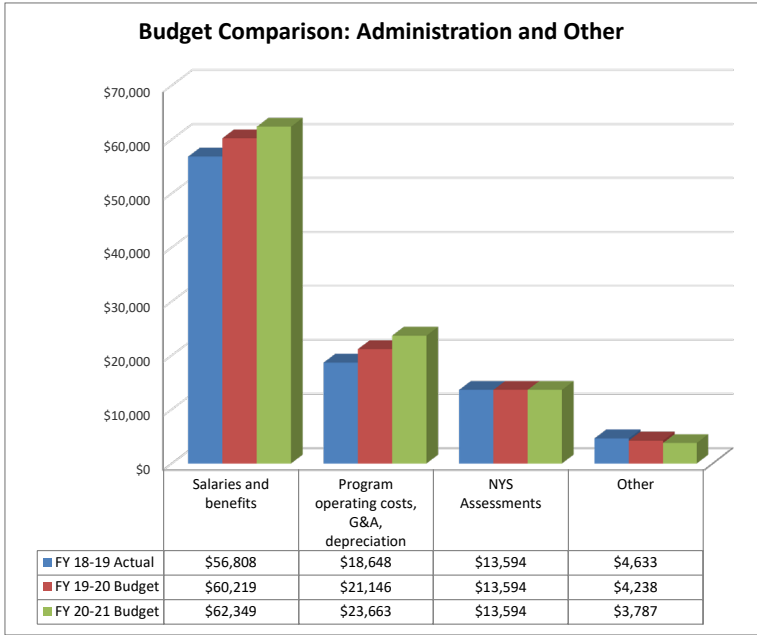
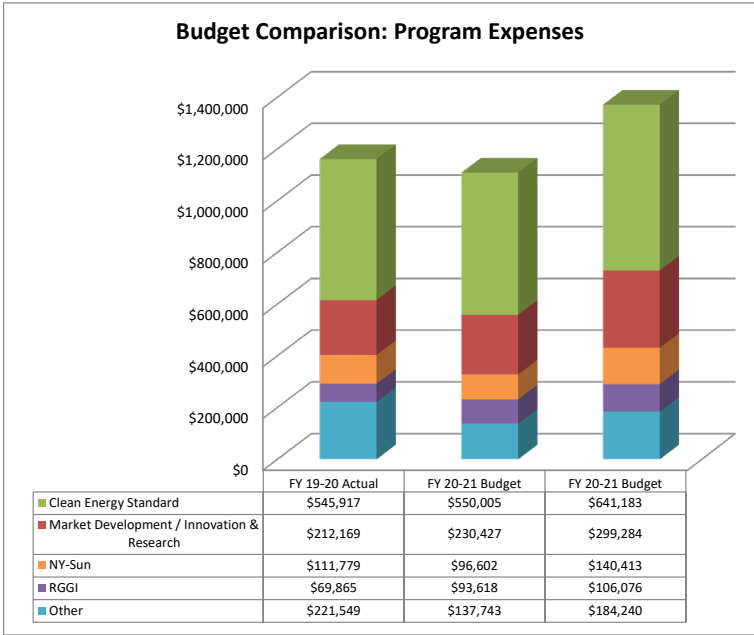
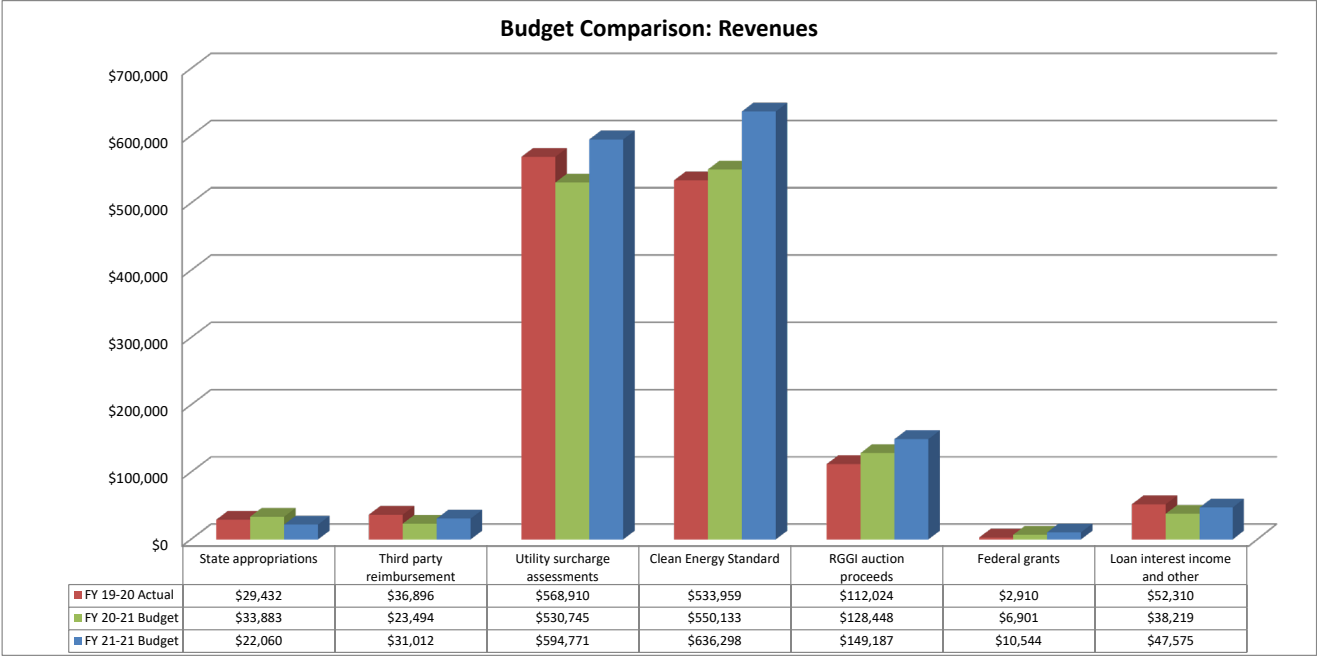
Budget FY 2021-22

(Amounts in thousands)



Budget FY 2021-22

(Amounts in thousands)



NYSERDA
 Budget FY 2021-22
 (Amounts in thousands)

	Budget FY 2021-22	Budget FY 2020-21
Net position beginning of year	\$ 1,410,843	1,079,131
<u>Revenues:</u>		
State appropriations	22,060	33,883
Third party reimbursement	31,012	23,494
Utility surcharge assessments	594,771	530,745
Renewable energy credit proceeds	45,825	9,096
Zero emission credit payments	590,473	541,037
Allowance auction proceeds	149,187	128,448
Project repayments	200	385
Federal grants	10,544	6,901
Rentals from leases	996	986
Interest income	1,002	684
Loan interest	33,907	30,988
QECCB interest subsidy	306	355
Fees and other income	11,164	4,821
Total Revenues	1,491,447	1,311,823
<u>Expenses:</u>		
Salaries and benefits	62,349	60,219
Program expenditures	1,371,196	1,108,395
Investment related expenses	163	348
Program operating costs	4,514	3,598
General & administrative expenses	16,615	14,245
Depreciation	2,534	3,303
NYS Assessments	13,594	13,594
Bond interest and fees	3,624	3,890
Total Expenses	1,474,589	1,207,592
Net (expense) revenue and change in net position	16,858	104,231
<u>Net position end of year:</u>		
Restricted for specific programs	393,370	389,056
NY Green Bank Capitalization	1,017,010	776,208
Net Investment in Capital Assets	12,997	13,767
Unrestricted	4,324	4,331
Total net position end of year	\$ 1,427,701	1,183,362

NYSDA
 Budget FY 2021-22
 (Amounts in thousands)

Functions/Programs										
	Market Development / Innovation & Research	NY Green Bank	NY-Sun	Clean Energy Standard	RGGI	Energy & Environmental Analysis	West Valley	Other	Budget FY 2021-22	Budget FY 2020-21
Net position, beginning of year	\$ 45,362	1,002,329	17,504	(25,114)	133,412	3,101	-	239,941	1,410,843	1,079,131
Revenues:										
State appropriations	-	-	-	-	1,141	143	20,500	276	22,060	33,883
Third party reimbursement	15,000	-	-	-	-	-	2,056	13,956	31,012	23,494
Utility surcharge assessments	295,578	-	152,007	-	-	13,666	-	133,520.74	594,771	530,745
Renewable energy credit proceeds	-	-	-	45,825	-	-	-	-	45,825	9,096
Zero emission credit payments	-	-	-	590,473	-	-	-	-	590,473	541,037
Allowance auction proceeds	-	-	-	-	149,187	-	-	-	149,187	128,448
Project repayments	-	-	-	-	-	-	-	200	200	385
Federal grants	-	-	-	-	-	2,850	-	7,694	10,544	6,901
Rentals from leases	-	-	-	-	-	-	-	996	996	986
Interest income	108	343	61	124	154	-	-	212	1,002	684
Loan interest	-	25,578	-	-	-	-	-	8,329	33,907	30,988
QECB interest subsidy	-	-	-	-	-	-	-	306	306	355
Fees and other income	-	3,967	-	7,000	-	-	-	197	11,164	4,821
Total Revenues	310,685	29,888	152,067	643,422	150,482	16,659	22,556	165,687	1,491,447	1,311,823
Expenses:										
Salaries and benefits	22,794	9,017	2,234	6,028	5,935	5,939	2,633	7,769	62,349	60,219
Program expenditures	299,284	600	140,413	641,183	106,076	8,497	18,794	156,349	1,371,196	1,108,395
Investment related expenses	-	163	-	-	-	-	-	-	163	348
Program operating costs	689	2,716	55	75	4	375	149	451	4,514	3,598
General & administrative expenses	6,073	2,391	595	1,617	1,580	1,577	714	2,068	16,615	14,245
Depreciation	1,133	180	281	166	119	118	58	479	2,534	3,303
NYS Assessments	3,071	140	1,336	6,040	1,058	153	208	1,588	13,594	13,594
Bond interest and fees	-	-	-	-	-	-	-	3,624	3,624	3,890
Total Expenses	333,044	15,207	144,914	655,109	114,772	16,659	22,556	172,328	1,474,589	1,207,592
Net sources / (uses) of net position other than transfers	(22,359)	14,681	7,153	(11,687)	35,710	(1)	-	(6,641)	16,858	104,231
Inter-program transfers	33,789	-	-	-	(45,789)	-	-	12,000	-	-
Net Investment in Capital Assets	(677)	-	(236)	(44)	-	-	(4)	191	(770)	(743)
Net Position End of Year:										
Restricted for specific programs	56,184	-	24,388	(36,853)	123,333	3,101	(200)	223,416	393,370	389,056
NY Green Bank Capitalization	-	1,017,010	-	-	-	-	-	-	1,017,010	776,208
Net Investment in Capital Assets	608	-	269	52	-	-	200	11,868	12,997	13,767
Unrestricted	-	-	-	-	-	-	-	4,324	4,324	4,331
Net position end of year	\$ 56,792	1,017,010	24,657	(36,801)	123,333	3,101	-	239,608	1,427,701	1,183,362

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
State appropriations					
West Valley	\$ 15,043	18,200	2,300	20,500	Reflects an increase in anticipated program expenditures for NYSERDA's share of federal and state spending at West Valley.
Energy & Environmental Analysis - Low-Level Radioactive Waste RGGI	150	150	(8)	143	Reflects a 5% reduction in accordance with Division of the Budget guidelines.
Other Programs - Energy/Environmental projects	1,602	6,169	(5,028)	1,141	Reflects a reduction in anticipated expenditures under the RGGI Cleaner Greener Community program (repayment of the FY 13-14 transfer of \$25 million to the State General Fund) and removal of reimbursement funding for the 76 West initiative which was included in FY 20-21 budget.
Other Programs - Energy/Environmental projects	12,637	9,364	(9,088)	276	Reflects a decrease in anticipated expenditures under a UDC Capital Budget appropriation and reduction in reimbursement funding for a Brookhaven National Lab Energy Storage project which was completed during FY 20-21.
Total state appropriations	29,432	33,883	(11,823)	22,060	
Third party reimbursement	36,896	23,494	7,518	31,012	Reflects an increase in funding to be received under the Federal Government Volkswagen settlement, offset in part by a reduction in reimbursement funding based on anticipated expenditures under the Indian Point Energy Center Reliability Contingency and National Fuel Gas gas efficiency programs.
Utility surcharge assessments					
Market Development/ Innovation & Research NY-Sun	226,809	195,798	99,780	295,578	Increase reflects revenues based on anticipated expenditures under the BAYG approach.
Energy Storage	126,197	80,933	71,074	152,007	Increase reflects revenues based on anticipated expenditures under the "Bill-As-You-Go" (BAYG) approach.
SBC/RPS/(EEPS FY19-20 actuals only)	-	11,888	47,241	59,129	Increase reflects revenues based on anticipated expenditures under the BAYG approach for this program which was authorized by the Public Service Commission in January 2019.
18-a funding	175,526	63,892	1,466	65,358	Decrease reflects revenues based on anticipated expenditures under the BAYG approach, which reflects winding down and closure of legacy SBC, EEPS, and RPS programs.
NY Green Bank	19,700	22,700	-	22,700	(No change)
Total utility surcharge assessments	20,678	155,534	(155,534)	-	NY Green Bank anticipated to fully draw upon ratepayer-funded capitalization during FY20-21.
Renewable energy credit proceeds	568,910	530,745	64,026	594,771	
Zero emission credit assessments	5,613	9,096	36,729	45,825	Reflects an anticipated increase in the number of renewable energy credits to be sold to load serve entities pursuant to newly revised compliance requirements under the existing Clean Energy Standard Tier One and new Tier Two State-mandated compliance programs.
Allowance auction proceeds	528,346	541,037	49,436	590,473	Increase is based on the maximum "zero-emission" credit price established pursuant to the Clean Energy Standard Order of the Public Service Commission (PSC) but the actual subsidy price will be determined prior to April 1, 2021.
Project repayments	112,024	128,448	20,739	149,187	Reflects an increase in both the anticipated allowance price and number of allowances to be auctioned consistent with the FY 21-22 RGGI Operating Plan. The allowance price is based on the September 2020 auction results.
Federal grants	68	385	(185)	200	Reflects a decrease based on anticipated recoupment payments.
Rentals from leases	2,910	6,901	3,643	10,544	Principally reflects a net increase in anticipated reimbursable expenditures under the U.S. Department of Energy (DOE) 'Offshore Wind Consortium' and 'State Energy Program' grants and an increase in a NYS Department of Transportation Congestion Mitigation Air Quality grant, offset in part by decreases in certain DOE energy efficiency special project grants.
Interest income	1,026	986	10	996	(Minor change)
Loan interest - NY Green Bank	18,338	684	318	1,002	Increase is principally due to expected higher investment balances. Yields are based on a one-year U.S. Treasury bond index rate (FY 20-21's assumed rate was .10% and FY 21-22's assumed rate is .12%).
Loan interest - GJGNY	18,612	22,586	2,992	25,578	Reflects an increase in anticipated loan activity.
QECCB interest subsidy	7,739	8,402	(73)	8,329	Reflects a slight decrease increase in anticipated loan activity.
Fees and other income	402	355	(49)	306	Principally due to a lower outstanding principal balance on the 2013 Energy Efficiency Financing Revenue Bonds generating less interest expense qualifying for the subsidy.
Total Revenues:	6,125	4,821	6,343	11,164	Increase principally reflects non-refundable Clean Energy Standard bid fees not budgeted in FY 20-21, offset in part by a decrease in estimated NY Green Bank closing and undrawn fees.
	1,336,441	1,311,823	179,624	1,491,447	

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
<u>Expenses:</u>					
Salaries	39,683	42,768	(1,200)	41,568	Reflects a net decrease in assumed filled positions, partially offset by an assumed 2% cost-of-living adjustment and performance-based salary increases/awards presuming similar awards are approved for NYS employees.
Benefits	17,125	17,451	3,330	20,781	Principally reflects an anticipated increase in pension costs based on most recent FY20-21 actuarial pension expense from NYS Retirement System, as well as, increases in compensated absences and health insurance estimates based on current spending levels.
Total salaries and benefits	56,808	60,219	2,130	62,349	
Program expenditures					
NY-Sun	111,779	96,602	43,811	140,413	Reflects an increase in anticipated expenditures based on project completion dates and timing of incentive payments.
Market Development/ Innovation & Research	212,169	230,427	68,857	299,284	Reflects an overall increase in anticipated program activity resulting from the implementation of an increased number of approved initiatives.
Clean Energy Standard - REC	8,175	8,817	37,008	45,825	Reflects an increase in the projected purchase of renewable energy credits of on-line facilities under the Clean Energy Standard Tier One and Tier Two State-mandated compliance program.
Clean Energy Standard - ZEC	537,742	541,188	49,285	590,473	Represents an increase in payments to zero-emission generation facilities based on the maximum credit price established pursuant to the Clean Energy Standard Order of the Public Service Commission but the actual subsidy price will be determined prior to April 1, 2021.
Other Programs (individually < 5% of total)	202,353	116,084	48,697	164,781	Represents an overall increase in anticipated expenditures primarily for the Energy Storage Program which was authorized by the Public Service Commission in January 2019, offset in part by a decrease in RPS program expenditures from cancelled Main Tier contracts and for reduction in incentive payments for Customer-sited Tier technology projects based on program wind down.
Regional Greenhouse Gas Initiative	69,865	93,618	12,458	106,076	Reflects an increase in anticipated expenditures based on amounts included in the FY 21-22 RGGI Operating Plan.
West Valley	14,126	16,589	2,205	18,794	Reflects an increase in anticipated program expenditures for NYSERDA's share of federal and state spending at West Valley.
NY Green Bank	214	120	480	600	Reflects an increase in anticipated Evaluation expenditures.
Energy & Environmental Analysis	4,856	4,950	-	4,950	(No change)
Total program expenditures	1,161,279	1,108,395	262,801	1,371,196	
Investment related expenses - NY Green Bank	399	348	(185)	163	Represents a decrease in estimated non-reimbursed program related costs to support investment portfolio transactions.
Program operating costs	2,854	3,598	916	4,514	Primarily reflects an increase in temporary service costs for NY Green Bank.
General & administrative expenses	12,818	14,245	2,370	16,615	Reflects an increase in temporary service costs for several administrative departments, an increase in IT software needs, IT professional service costs, and web based storage upgrades, offset in part by a decrease in telecommunications costs.
Depreciation	2,976	3,303	(769)	2,534	Reflects a decrease in projected depreciation on existing capital assets which is offset in part from planned additions in FY 21-22.
NYS Assessments	13,594	13,594	-	13,594	(No change)
Bond interest and fees	4,234	3,890	(266)	3,624	Decrease reflects scheduled interest expense payments based on aggregate outstanding principal balances including the addition of the 2020 Residential Solar and Energy Efficiency Financing Green Revenue Bonds.
Total Expenses:	1,254,962	1,207,592	266,997	1,474,589	

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
Net (expense) revenue and change in net position	81,479	104,231	(87,373)	16,858	
Net position beginning of year	997,652	1,079,131	331,712	1,410,843	Reflects adjustments for known timing differences (in FY 20-21).
<u>Net position end of year:</u>					
Restricted for specific programs	452,462	389,056	4,314	393,370	Primarily from an increase in the anticipated effect of BAYG pursuant to the CEF Order, offset in part by a decrease in the anticipated timing of the Clean Energy Standard revenues and expenditures.
NY Green Bank Capitalization	606,394	776,208	240,802	1,017,010	Reflects the net effect of all undrawn capital, deployed capital, matured/recycled capital, and a cumulative result of revenues exceeding expenditures.
Net Investment in Capital Assets	14,234	13,767	(770)	12,997	Reflects anticipated asset purchases less depreciation.
Unrestricted	6,041	4,331	(7)	4,324	(Minor change)
Total net position end of year	<u>\$ 1,079,131</u>	<u>1,183,362</u>	<u>244,339</u>	<u>1,427,701</u>	

Certain amounts for FY 2019-20 and FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Salaries and benefits
 (Amounts in thousands)

	Actual	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Salaries **	39,683	42,768	(1,201)	41,567
Fringe Benefits:				
Pension	4,444	4,822	1,917	6,739
Compensated absence leave accruals	1,229	473	1,108	1,581
Health insurance	4,394	4,579	237	4,816
Postemployment health insurance (GASB 45/75)	2,608	2,709	113	2,822
NYS Paid Family Leave	38	68	62	130
Workers compensation	81	85	24	109
Unemployment	3	34	6	40
Short-Term Disability	0	0	5	5
Long-term disability insurance	87	90	3	93
Dependent Care plan	14	20	(6)	14
Dental plan	278	337	(10)	327
Voluntary Defined Contribution Plan	1,002	1,072	(15)	1,057
Vision care plan	24	34	(17)	17
Tuition reimbursement	38	35	(28)	7
Social Security/Medicare taxes	2,886	3,093	(68)	3,025
sub-total benefits	<u>17,125</u>	<u>17,451</u>	<u>3,331</u>	<u>20,782</u>
Percentage of Salaries	43.2%	40.8%		50.0%
Total Salaries and Benefits	<u><u>56,808</u></u>	<u><u>60,219</u></u>	<u><u>2,130</u></u>	<u><u>62,349</u></u>
Number of full-time equivalent employees (FTEs)	345.6	362.2	(8.1)	354.1

** Salaries include a 2% cost-of-living-adjustment which was originally scheduled to occur effective April 1, 2020, but has not been authorized by the State. The increase, if approved by NYS, will be in accordance with increases granted for M/C employees. No retroactive salary costs for FY 20-21 have been budgeted as it is uncertain whether a retroactive component will occur but would be paid out if authorized by NYS. Salaries also include performance-based salary increases and payments generally equivalent to salary increases and total salary costs anticipated to be provided for NYS employees.

NYSERDA FY21-22 Budget
 Detail schedule: Program Expenditures
 (Amounts in thousands)

<u>Function/Program</u>	<u>Working Budget *</u>	<u>Budget FY 2020-21</u>	<u>Budget FY 2021-22</u>	<u>Financial Plan FY 2022-23</u>	<u>Financial Plan FY 2023-24</u>	<u>Financial Plan FY 2024-25</u>	<u>Future</u>
Market Development/ Innovation & Research	\$ 2,610,352	230,427	299,284	350,798	351,233	308,582	1,070,029
NY Green Bank	1,915	120	600	535	660	-	-
NY-Sun	1,282,660	96,602	140,413	357,123	358,192	167,670	162,660
Clean Energy Standard - Offshore Wind	5,933,208	1,325	4,885	4,885	34,800	177,600	5,709,712
Clean Energy Standard - REC	4,756,374	14,413	23,603	90,833	134,464	169,029	4,324,032
Clean Energy Standard - REC Tier 2	200,770	-	22,222	40,000	48,889	31,111	58,548
Clean Energy Standard - ZEC	2,323,161	541,188	590,473	590,473	186,650	186,650	227,727
RGGI	456,255	93,618	106,076	106,875	91,104	10,245	48,337
Energy & Environmental Analysis	39,497	7,950	8,497	7,950	7,950	7,150	-
West Valley	91,244	16,589	18,794	18,769	18,618	18,474	-
Other Programs	740,217	106,162	156,350	170,383	103,363	54,232	149,727
Total	\$ 18,435,653	1,108,395	1,371,196	1,738,624	1,335,923	1,130,743	11,750,771

* Working Budget represents approved sponsor funding or amounts anticipated to be approved for future year activity

Certain amounts for FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Program Operating Costs
 (Amounts in thousands)

	Actuals	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Temporary Staffing, Outside Technical Reviewer	152	208	947	1,155
Office Supplies, Equipment Rental, and Other	292	292	131	423
Computer Services and Software	313	336	82	418
Rent, Maintenance & Repairs, Utilities, Insurance	403	415	8	423
Training, Recruitment & Relocation	0	61	(3)	59
Travel and Outreach Costs	440	595	(39)	555
Professional Services:				
STEP & Other Consulting	50	35	17	52
NY Green Bank	1,204	1,656	(227)	1,429
Total Professional Services	<u>1,254</u>	<u>1,691</u>	<u>(210)</u>	<u>1,481</u>
Total Program Operating Costs	<u><u>2,854</u></u>	<u><u>3,598</u></u>	<u><u>916</u></u>	<u><u>4,514</u></u>

NYSERDA FY 2021-22 Budget

Detail schedule: General & Administrative Expenses

(Amounts in thousands)

	Actuals	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Temporary Staffing, Outside Technical Reviewer	3,755	3,059	971	4,030
Computer Services and Software	2,862	3,424	915	4,339
Rent, Maintenance & Repairs, Utilities, Insurance	3,196	3,398	300	3,698
Professional Services:				
Website support services	420	380	160	540
Information Technology	1,056	2,069	27	2,096
Fiscal Agent, audit and third-party payroll and Human Resource services	513	542	17	559
Other Consulting	176	66	40	106
Internal Audit support services	1	50	-	50
Marketing	133	280	-	280
Communication and consumer support services	132	150	-	150
Total Professional Services	<u>2,431</u>	<u>3,537</u>	<u>244</u>	<u>3,781</u>
Training, Recruitment & Relocation	109	305	(3)	302
Travel and Outreach Costs	263	247	(12)	236
Office Supplies, Equipment Rental, and Other	202	275	(46)	229
Total General & Administrative Expense	<u><u>12,818</u></u>	<u><u>14,245</u></u>	<u><u>2,369</u></u>	<u><u>16,615</u></u>

Certain amounts for FY 2019-20 and FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Capital Budget
 (Amounts in thousands)

	<u>Actual</u> <u>FY 2019-20</u>	<u>Budget</u> <u>FY 2020-21</u>	<u>Change</u>	<u>Budget</u> <u>FY 2021-22</u>
Building improvements	-	260	701	961
Information technology upgrades	293	345	450	795
Furniture, fixtures and equipment	172	-	7	7
Leasehold improvements	20	-	-	-
STEP infrastructure	13	30	(30)	-
Vehicles	-	40	(40)	-
Clean Energy Fund system development costs	795	1,600	(1,600)	-
Total Capital Asset Additions	<u>1,293</u>	<u>2,275</u>	<u>(512)</u>	<u>1,763</u>

Certain amounts for FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Debt Schedule
 (Amounts in thousands)

Purpose: Refinancing of loans issued through the Green Jobs-Green New York financing program

	<u>Principal Issued</u>	<u>Anticipated Total Debt Service</u>	<u>Pledged Revenues</u>	<u>Debt service % of Pledged Revenues</u>	<u>FY 21-22 Debt Service</u>	<u>FY 21-22 FY 22-23 Outstanding Debt Principal</u>	<u>FY 22-23 FY 23-24 Outstanding Debt Service</u>	<u>FY 22-23 FY 23-24 Outstanding Debt Principal</u>	<u>FY 23-24 Outstanding Debt Principal</u>	
Residential Energy Efficiency Financing Revenue Bonds										
Series 2013A (NYS EFC Guarantee)	24,300	29,651	37,436	79.2%	2,133	8,880	1,892	7,290	1,697	5,845
Series 2015A	46,358	53,824	67,991	79.2%	3,738	27,310	3,660	24,210	3,657	21,050
Series 2016A	23,180	27,539	34,473	79.9%	2,017	15,695	1,859	14,190	1,785	12,730
Residential Solar Loan Revenue Bonds, Series 2015A	48,536	75,406	86,927	86.7%	3,843	17,081	3,813	14,031	3,292	11,353
Residential Solar Loan Revenue Bonds, Series 2018A	18,500	21,908	30,732	71.3%	2,018	12,175	1,967	10,675	1,720	9,375
Residential Solar and Energy Efficiency Financing Green Revenue Bonds, Series 2019A	15,510	18,339	21,257	86.3%	1,844	11,700	1,736	10,380	1,630	9,125
Residential Solar and Energy Efficiency Financing Green Revenue Bonds, Series 2020A	<u>16,690</u>	<u>19,859</u>	<u>22,611</u>	87.8%	<u>2,287</u>	<u>14,785</u>	<u>2,415</u>	<u>12,720</u>	<u>2,137</u>	<u>10,900</u>
Total	193,074	246,526	301,427	81.8%	17,880	107,626	17,342	93,496	15,918	80,378

Proposed New Debt *

* No new debt issues are included in the Budget and Financial Plan as additional debt issues will require approval by the NYSERDA Board and the Public Authorities Control Board.

NYSERDA
 Budget FY 2021-22
 Financial Plan
 (Amounts in thousands)

	FY 2021-22 Budget	FY 2022-23 Projection	FY 2023-24 Projection	FY 2024-25 Projection
REVENUES:				
State appropriations	\$ 22,060	22,763	23,496	22,518
Third party reimbursement	31,012	29,056	29,056	29,056
Utility surcharge assessments	594,771	934,287	843,731	538,780
Renewable energy credit proceeds	45,825	91,236	188,051	354,283
Zero emission credit payments	590,473	590,473	186,650	186,650
Allowance auction proceeds	149,187	143,175	132,632	132,632
Federal grants	10,544	12,123	8,015	6,524
Other income	47,575	47,030	52,937	58,964
TOTAL REVENUES	1,491,447	1,870,142	1,464,568	1,329,406
EXPENSES:				
Salaries and benefits	62,349	64,219	66,146	68,130
Program expenditures	1,371,196	1,738,624	1,335,923	1,130,743
Investment related expenses	163	370	377	385
Program operating costs	4,514	4,671	4,791	4,924
General & administrative expenses	16,615	16,601	17,098	17,612
Depreciation	2,534	2,097	1,712	1,386
NYS assessments	13,594	13,594	13,594	13,594
Bond interest and fees	3,624	3,213	2,800	2,419
TOTAL EXPENSES	1,474,589	1,843,390	1,442,441	1,239,195
Net (expense) revenue and change in net position	16,858	26,753	22,126	90,212
Net position beginning of year	1,410,843	1,427,701	1,454,454	1,476,580
Total net position end of year	\$ 1,427,701	1,454,454	1,476,580	1,566,792

NYSERDA
 FY 2021-22 Cash-Based Budget
 (Amounts in thousands)

	Functions/Programs								FY 21-22 Cash Budget Total Total
	Market Development / Innovation & Research	NY Green Bank	NY-Sun	Clean Energy Standard	RGGI	Energy & Environmental Analysis	West Valley	Other	
RECEIPTS:									
State appropriations	\$ -	-	-	-	1,141	143	20,500	276	22,060
Third party reimbursement	15,000	-	-	-	-	-	2,056	13,956	31,012
Utility surcharge assessments	295,578	-	152,007	-	-	13,666	-	133,521	594,771
Renewable energy credit proceeds	-	-	-	45,825	-	-	-	-	45,825
Zero emission credit payments	-	-	-	590,473	-	-	-	-	590,473
Allowance auction proceeds	-	-	-	-	149,187	-	-	-	149,187
Project repayments	-	-	-	-	-	-	-	200	200
Federal grants	-	-	-	-	-	2,850	-	7,694	10,544
Rentals from leases	-	-	-	-	-	-	-	996	996
Interest income	108	343	61	124	154	-	-	212	1,002
Loan interest	-	25,578	-	-	-	-	-	8,329	33,907
Loan principal repayments	-	187,553	-	-	-	-	-	18,653	206,206
QECB interest subsidy	-	-	-	-	-	-	-	306	306
Fees and other income	-	3,967	-	7,000	-	-	-	197	11,164
TOTAL REVENUES	310,685	217,441	152,067	643,422	150,482	16,659	22,556	184,340	1,697,653
DISBURSEMENTS:									
Salaries and benefits	22,794	9,017	2,234	6,028	5,935	5,939	2,633	7,769	62,349
Program expenditures	299,284	600	140,413	641,183	106,076	8,497	18,778	156,349	1,371,180
Investment related expenses	-	163	-	-	-	-	-	-	163
Other Operating costs	689	2,716	55	75	4	375	149	451	4,514
General & administrative expenses	6,073	2,391	595	1,617	1,580	1,577	714	2,068	16,615
Capital asset additions	645	255	63	171	168	168	74	219	1,763
Deployed Capital	-	234,163	-	-	-	-	-	-	234,163
Bond interest and fees	-	-	-	-	-	-	-	3,624	3,624
Principal bond payment	-	-	-	-	-	-	-	14,256	14,256
Loan purchases	-	-	-	-	-	-	-	32,318	32,318
NYS Assessments	3,071	140	1,336	6,040	1,058	153	208	1,588	13,594
TOTAL EXPENSES	332,556	249,445	144,696	655,114	114,821	16,709	22,556	218,641	1,754,538
Net (expense) revenue and change in cash position	(21,871)	(32,004)	7,371	(11,692)	35,661	(51)	-	(34,301)	(56,885)
Cash and investments, beginning of year	58,729	298,038	29,950	114,213	119,142	3,493	-	101,472	725,037
Inter-program transfers	33,789	-	-	-	(45,789)	-	-	12,000	-
Cash and investments, end of year	\$ 70,648	266,034	37,321	102,521	109,014	3,442	-	79,172	668,152

Resolution No. _____

RESOLVED, that the proposed fiscal year 2021-22 Budget and Financial Plan submitted to the Members for consideration at this meeting, with such non-material, editorial changes and supplementary schedules as the Acting President and Chief Executive Officer, in her discretion, may deem necessary or appropriate, be and it hereby is recommended for approval by the Board for submission to the persons designated in Sections 1867(4) and 2801 of the Public Authorities Law.



NYSERDA

ANDREW M. CUOMO
Governor

RICHARD L. KAUFFMAN
Chair

DOREEN M. HARRIS
Acting President and CEO

REVISED NOTICE OF MEETING AND AGENDA

January 25, 2021

TO THE GUESTS OF THE WASTE AND FACILITIES MANAGEMENT COMMITTEE:

PLEASE TAKE NOTICE that the sixty-sixth (66th) meeting of the WASTE AND FACILITIES MANAGEMENT COMMITTEE of the NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY (the “Authority”) will be held by video conference, on Wednesday, February 3, 2021, commencing at 10:00a.m., for the following purposes:

1. To consider the Minutes of the sixty-fifth (65th) meeting of the Committee held on June 22, 2020.
2. To receive a report from the Treasurer and to consider and act upon a resolution recommending approval of regarding the Authority’s Fiscal Year 2021-2022 Budget.
3. To receive a status report on West Valley Site Management Program activities.
4. To enter into Private Session for the purposes of discussing attorney-client privileged matters.
5. To receive a status report on nuclear coordination activities.
6. To transact such other business as may properly come before the Committee.

As the Authority continues to follow the guidance for addressing the impacts of COVID-19, Members of the public may attend the meeting via the video conference which can be accessed at <https://www.nyserda.ny.gov/About/Board-Governance/Board-and-Committee-Meetings>.

The Authority will be posting a video and a transcript of the meeting to the web as soon as practicable after the meeting. The video and transcript will be posted at <http://www.nyserda.ny.gov/About/Board-Governance/Board-and-Committee-Meetings>.

Janice A. Dean
Secretary to the Waste and Facilities
Management Committee

New York State Energy Research and Development Authority

Albany
17 Columbia Circle, Albany, NY 12203-6399
(P) 1-866-NYSERDA | (F) 518-862-1091
nyserda.ny.gov | info@nyserda.ny.gov

Buffalo
726 Exchange Street
Suite 821
Buffalo, NY
14210-1484
(P) 716-842-1522
(F) 716-842-0156

New York City
1359 Broadway
19th Floor
New York, NY
10018-7842
(P) 212-971-5342
(F) 518-862-1091

**West Valley Site
Management Program**
9030-B Route 219
West Valley, NY
14171-9500
(P) 716-942-9960
(F) 716-942-9961

DRAFT

New York State Energy Research and Development Authority

Fiscal Year 2021-22 Budget and Financial Plan

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CERTIFICATION

DRAFT

I hereby certify that, to the best of my knowledge and belief after reasonable inquiry, the budget information contained herein for the fiscal year ending March 31, 2022 has been developed based on reasonable assumptions and methods of estimation.

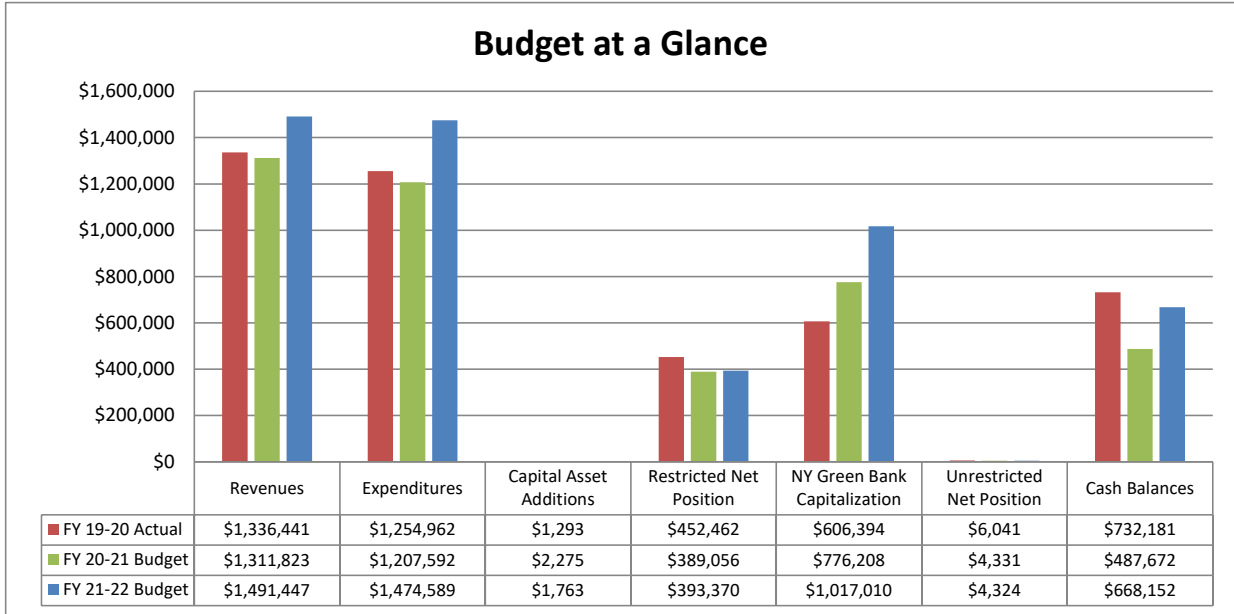


Doreen M. Harris
Acting President and Chief Executive Officer



Jeffrey J. Pitkin
Treasurer and Chief Financial Officer

Budget FY 2021-22
(Amounts in thousands)



INTRODUCTION

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation established in 1975 pursuant to Title 9 of Article 8 of the Public Authorities Law of the State of New York. NYSERDA is a component unit of the State of New York and, as such, the results of operation are reported in the State of New York's Comprehensive Annual Financial Report.

The Budget for the fiscal year ending March 31, 2022 (FY 2021-22), and the Financial Plan for FY's 2022-23 to 2024-25 were prepared in accordance with accounting principles generally accepted in the United States of America.

PROGRAM SUMMARY

Following is a summary of the functions/activities included in the Budget:

Clean Energy Fund (CEF)

Pursuant to a January 2016 Order (CEF Order), the Public Service Commission (PSC) authorized a ten-year commitment through 2025 of approximately \$5.322 billion to clean energy programs through a CEF. The CEF is designed to meet four primary objectives: greenhouse gas emission reductions; energy affordability; statewide penetration and scale of energy efficiency and clean energy generation; and growth in the State's clean energy economy.

The CEF Order provided for a ten-year funding authorization of \$3.43 billion for the Market Development and Innovation & Research activities, and also provided for additional funding authorization of \$781.5 million for the NY Green Bank, \$960.6 million for NY-Sun, and \$150 million for the Renewable Portfolio Standard Program for a 2016 Main Tier solicitation. The NY-Sun and NY Green Bank programs are presented as separate Programs/Functions in the budget document as further described below.

Market Development and Innovation & Research

The CEF Market Development activities are designed to reduce costs, accelerate customer demand, and increase private investment for energy efficiency and other behind-the-meter clean energy solutions through strategies including financial support, technical knowledge, data, education to customers and service providers, and advanced workforce training. The CEF Innovation & Research activities are designed to invest in cutting-edge technologies that will meet increasing demand for clean energy including: smart grid technology, renewables and distributed energy resources, high performance buildings, transportation, and clean tech startup and innovation development.

NY-Sun

Approved through a 2012 PSC Order, the NY-Sun program is designed to develop a sustainable and subsidy-free solar electric industry through a megawatt block approach. The NY-Sun program was initially funded through \$216 million reallocated under the RPS program; as a result, certain expenditures for the NY-Sun program are included in the RPS program in the budget. The CEF Order established the incremental collection schedule by utilities and reallocation of NYSERDA clean energy uncommitted funds to support program activities approved through the 2012 Order. A May 2020 Order was approved by the PSC to increase the NY-Sun funding level by \$573 million to expand the capacity target from 3 GW by 2023 to 6 GW by 2025.

NY Green Bank

The key elements of NY Green Bank's mission are collaborating with private sector participants, implementing structures that overcome barriers and address gaps in current clean energy financing markets, and transforming those markets by enabling greater scale, new and expanded asset classes and liquidity. These factors combined have the objectives to motivate faster and more extensive implementation of clean energy assets within New York State, foster greater energy choices, reduce environmental impacts and accrue more green energy advantages per public dollar spent for the benefit of all New Yorkers.

NY Green Bank's initial capitalization was established from \$315.6 million in uncommitted utility surcharge assessment funds and \$52.9 million from RGGI revenues (which was subsequently redeemed to support NYSERDA's statewide energy storage initiative). As discussed above, the CEF Order authorized incremental collections for the remaining \$631.5 million of NY Green Bank's capitalization.

Clean Energy Standard (CES)

Pursuant to an August 2016 and subsequent Orders, the Clean Energy Standard was established adopting a State Energy Plan goal that 50% of New York's electricity is to be generated by renewable sources by 2030, as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030. The mandated actions are divided into two categories, a Renewable Energy Standard (RES) and a Zero-Emissions Credit (ZEC) requirement. The RES directs NYSERDA to procure renewable energy credits from renewable energy generation from qualifying facilities through competitively selected long-term contracts, and to offer such credits for periodic sale to Load Serving Entities (LSE) to meet their obligations to serve their retail customers through the procurement of a minimum percentage of qualifying renewable energy credits. The RES also includes an obligation on distribution utilities on behalf of all retail customers to continue to invest in the maintenance of existing at-risk renewable generation attributes and a program to maximize the value potential of new offshore wind resources. The ZEC requirement consists of an obligation for NYSERDA to provide payments to certain nuclear generation facilities for the production of zero-emissions attributes from such facilities, funded from monthly installment payments collected from LSEs for their proportionate share of such attributes to serve their retail customers evidenced by the procurement of qualifying zero emission credits. In October 2020 the PSC approved an Order adopting modifications to the Clean Energy Standard to implement New York's Climate Leadership and Community Protection Act. The Order allows for a continuation of Tier 1 solicitations to ensure that 70% of the load in 2030 is served by renewable resources, NYSERDA will create a new competitive Tier 2 program to ensure the continued availability of legacy baseline resources to meet the State's renewable energy goals, NYSERDA will also create a new competitive Tier 4 program to increase penetration of renewable energy in New York City and reducing reliance on fossil fuel usage, and NYSERDA will continue to conduct annual offshore wind solicitations to achieve the statewide goal of 9 GW by 2035.

Regional Greenhouse Gas Initiative (RGGI)

The Regional Greenhouse Gas Initiative, or RGGI, is an agreement among nine Northeastern and Mid-Atlantic States to reduce greenhouse gas emissions from power plants. The RGGI states (Participating States) have committed to cap and then reduce the amount of carbon dioxide that certain power plants are allowed to emit, limiting the region's total contribution to atmospheric greenhouse gas levels. The Participating States have agreed to implement RGGI through a regional cap-and-trade program whereby the Participating States have agreed to auction annual

regional emissions. Rules and regulations promulgated by the NYS Department of Environmental Conservation (DEC) call for NYSERDA to administer periodic auctions for annual emissions. Pursuant to these regulations, the proceeds will be used by NYSERDA to administer energy efficiency, renewable energy, and/or innovative carbon abatement programs, and to cover the costs to administer such programs.

West Valley

NYSERDA manages, on behalf of the State, the Western New York Nuclear Service Center (West Valley), which is the site of a former plant for reprocessing used nuclear fuel. Through 1972, the former plant operator, Nuclear Fuel Services, Inc., generated as a by-product of its reprocessing operations, more than 600,000 gallons of liquid, high-level radioactive waste, which were stored at the site. In 1980, Congress enacted the West Valley Demonstration Project Act (West Valley Act). Pursuant to the West Valley Act, the U.S. Department of Energy (DOE) is carrying out a demonstration project to: (1) solidify the liquid high-level radioactive waste at West Valley; (2) transport the solidified waste to a permanent federal repository; and (3) decontaminate and decommission the reprocessing plant and the facilities, materials, and hardware used in the project. NYSERDA and the Federal government share the combined expenses incurred for this program.

NYSERDA also maintains, on behalf of the State, the State-Licensed Disposal Area (SDA), which is a shut-down commercial low-level radioactive waste disposal facility at West Valley. NYSERDA is evaluating how to remediate and close this facility in accordance with regulatory requirements.

Energy and Environmental Analysis

Through this program, NYSERDA provides objective and credible analyses of energy issues to various stakeholders. The program also includes activities for energy-related emergency planning and response, and support for State energy planning functions.

NYSERDA is also responsible for coordination of nuclear material matters, including serving as the State liaison with the Nuclear Regulatory Commission.

These activities are primarily funded through an assessment authorized under Section 18-a of Public Service Law and a Federal State Energy Plan grant.

Pursuant to the State Low-Level Radioactive Waste (LLRW) Management Act of 1986, NYSERDA is responsible for collecting information and providing regular reports to the Governor and Legislature on LLRW generation in the State. These activities are funded with a State appropriation sub-allocated from an appropriation provided to the NYS Department of Health, which is funded through an assessment collected on operating nuclear power plant licensees.

Other

Other programs represent an aggregate of smaller programs/functions. These activities are primarily funded through Commission Orders, Memorandum of Understanding with various utilities pursuant to Commission Orders, various third-party reimbursements, federal energy grants, State appropriations and assessments authorized under Section 18-a of the Public Service Law.

BUDGETARY ASSUMPTIONS

The following are the principal budget assumptions used in developing the Budget and Financial Plan:

- The CEF Order established a “Bill-As-You-Go” approach for revenue collection effective January 1, 2016. Under this approach, incremental CEF ratepayer collections and the previously approved collections for New York Energy Smart, Technology and Market Development, and Renewable Portfolio Standard programs not yet paid to NYSERDA, will be held by the electric and gas utilities and used to reimburse NYSERDA for actual CEF program expenses and NY Green Bank committed capital through a monthly reimbursement process, provided that the reimbursement allows NYSERDA to maintain a sufficient cash balance based on projected expenses for the subsequent two-month period, subject to the utilities’ unremitted collection balances approved in the CEF Order. Utility surcharge assessments revenue is based on anticipated expenditures and NY Green Bank committed capital, prior fiscal year projected cash balances, and the resulting collections projected to maintain working capital pursuant to this approach.
- NY Green Bank loan interest and fees are based on estimates of committed and deployed capital.
- Allowance auction proceeds for the Regional Greenhouse Gas Initiative (RGGI) are based on the allowance price realized in the September 2020 auction .
- West Valley’s State appropriation revenue for FY 2021-22 through FY 2024-25 is based primarily on the State’s 10% share of West Valley Demonstration Project costs and the State’s share under the Consent Decree. These estimates assume future U.S. Department of Energy (DOE) annual funding of approximately \$92.4 million for FY 2021-22 through FY 2024-25, for its share of project costs.
- Interest income is based on assumed balances available for investment and based on a one-year U.S. Treasury bond index yield.
- GJGNY budgeted loan interest income assumes additional loans to be issued during FY 2021-22 of up to \$32.3 million based on current loan origination volume.
- Salary costs for current staff and funded vacant positions expected to be filled are based on salary grades equivalent to the State Management/Confidential (M/C) employees. Salaries include a 2% cost-of-living-adjustment which was originally scheduled effective April 1, 2020, but has not yet been authorized by the State. The increase, if approved by NYS, will be in accordance with increases granted for M/C employees. No retroactive salary costs for FY 20-21 have been budgeted as it is uncertain whether a retroactive component will occur but would be paid out if authorized by NYS. Salaries also include performance-based salary increases and payments comparable to those which may be authorized for state employees.
- Fringe benefit costs are generally based on prior year actual costs as a percentage of salary costs. Due to market declines in March of 2020, NYSERDA’s actuarially-determined pension expense allocated from the NYS Retirement System increased by \$4.2 million in FY 2019-20 to \$9.0 million for FY 2020-21. Since the market has rebounded from the March 2020 decline, NYSERDA anticipates next year’s actuarially-determined pension expense to decrease, and possibly return to previous levels, but the actuarial calculation is dependent upon multiple conditions/assumptions at a particular point in time (March 31, 2021). The FY 2021-22 assumption of \$6.7 million is an average of the past two years to be conservative. The OPEB expense under Governmental Accounting Standards Board Statement No. 75 in the FY 2021-22 Budget is based on preliminary actuarial estimates calculated, but the final amount may differ once a final actuarial calculation is prepared.

- The NYS Cost Recovery Fee represents the fee paid to the State under Section 2975 of the Public Authorities Law (Governmental Cost Recovery System) for general governmental services. The FY 2020-21 Budget assumes that NYSERDA's assessment will be \$12.7 million, which is based on the prior year assessed value.
- The Budget includes no significant or non-recurring revenue-enhancement or cost-reduction initiatives which shift resources from one year to another.

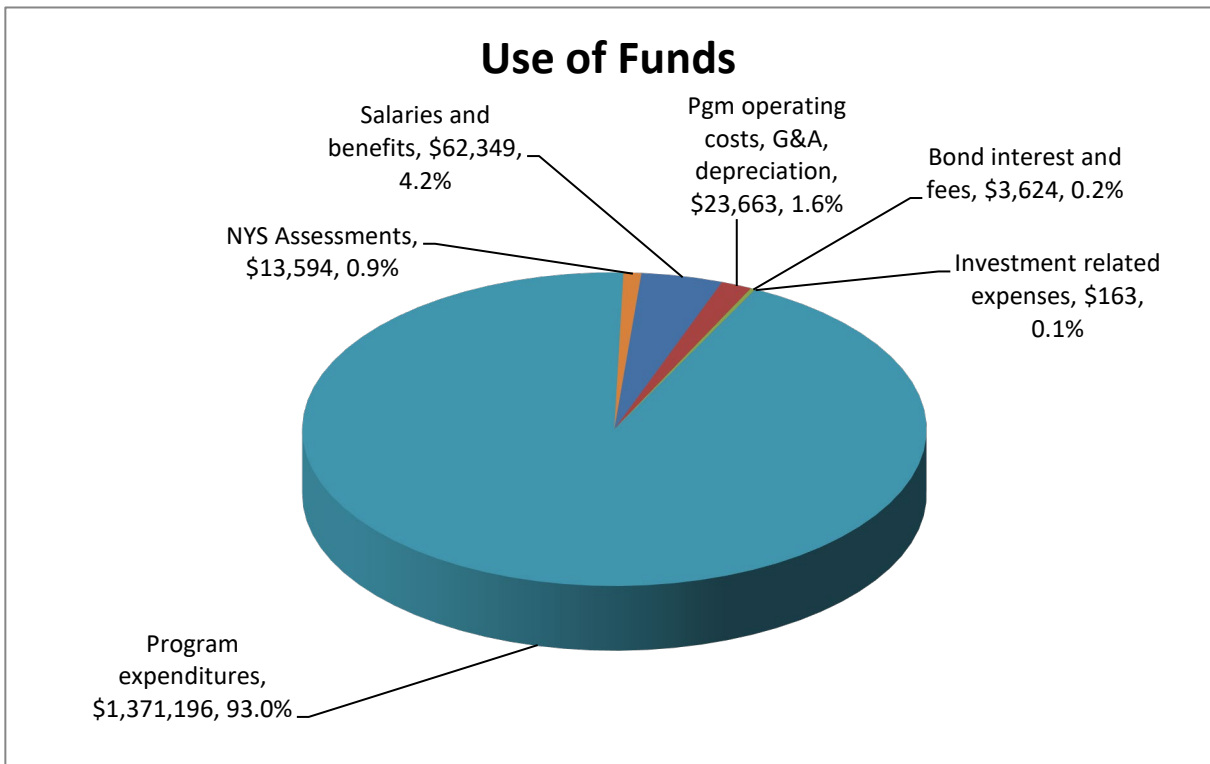
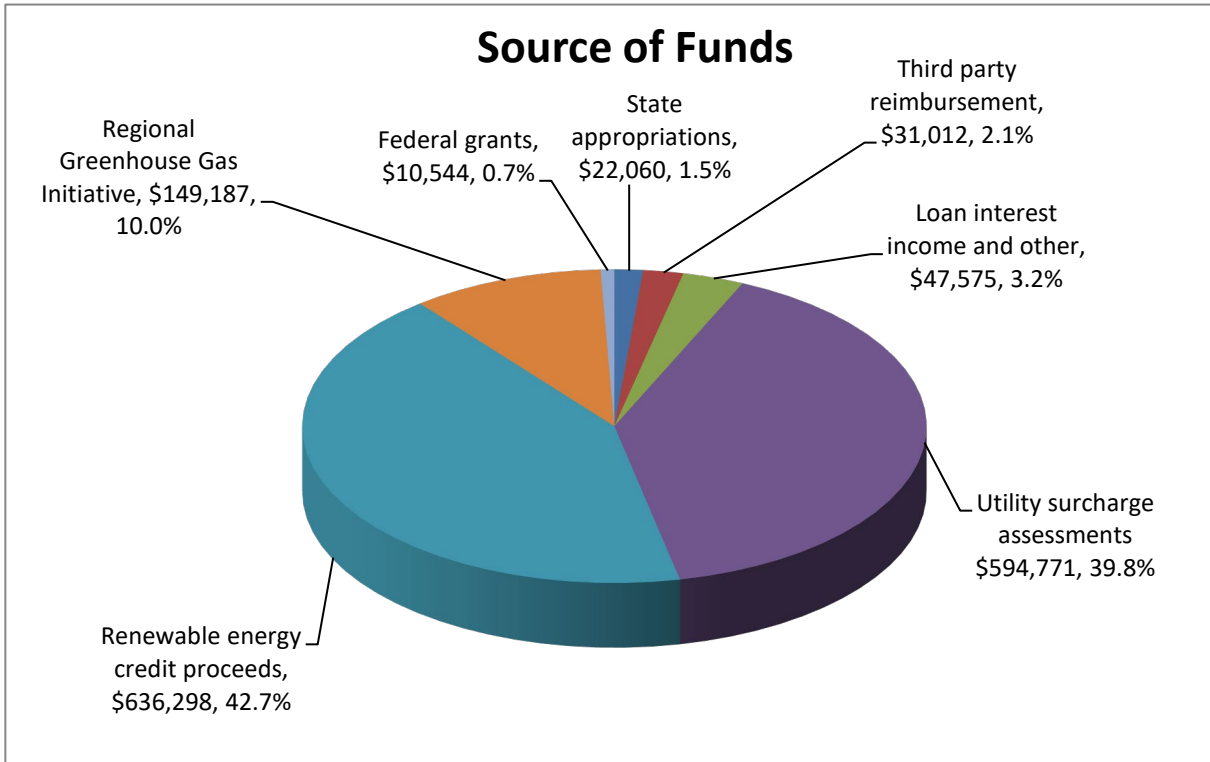
BUDGETARY RISKS

The following is a summary of significant budgeting risks:

- NYSERDA's budgeting process is subject to inherent risks regarding the ability to accurately forecast revenues and expenditures.
- Over the past several years, NYSERDA has assumed responsibility for administering certain new programs, and additional program responsibilities may be added during FY 2021-22 that have not been included in the Budget.
- Revenues resulting from auctions of allowances under the Regional Greenhouse Gas Initiative (RGGI) have shown some volatility over the past few years. NYSERDA has developed a multi-year program planning approach for these revenues, but variations in actual proceeds realized makes it difficult to complete accurate long-term planning.
- Program expenditures for most programs are funded with revenues which are generally received in advance of expenditures. Under the modified accrual basis of accounting, these funds are recorded as revenue when received, with any unexpended funds recorded as Restricted Net Position. Timing of program activity may result in either: (1) revenues exceeding expenses during the Budget period; or (2) expenditures funded in part, by unexpended revenues from prior fiscal periods. It is anticipated that under the CEF BAYG approach NYSERDA will see more consistency in recording revenues in the same time period that expenditures are incurred.
- Expenditures for the West Valley program are based primarily on the amount anticipated to meet the State's share of costs for West Valley under the Cooperative Agreement and the Consent Decree which are dependent upon funds provided in the federal budget to the U.S. Department of Energy (DOE).
- Although DOE and NYSERDA have reached agreement on the allocation of costs (percentages) to be paid by each entity for remediating the West Valley site, the remedial action decisions for several significant facilities will not be finalized prior to 2023. In addition, DOE has taken the position that State will be responsible for waste disposal fees when high level waste on-site reaches an ultimate repository destination, a figure to be calculated at the time of disposal pursuant to the Nuclear Waste Policy Act, 42 U.S.C. 10101 et seq. The agreement between the parties left this issue unresolved, as no national repository option will be in place for many years. Although NYSERDA has advanced, and will continue to advance, legal arguments as to why this responsibility is not one that rightfully falls on the State, additional State funding may be required once the issue is resolved.
- Pension costs and retirement health insurance costs are based on actuarial valuations, and such valuations could be impacted by a number of assumptions, general economic conditions, and future events which could lead to variances from estimated annual expenses.

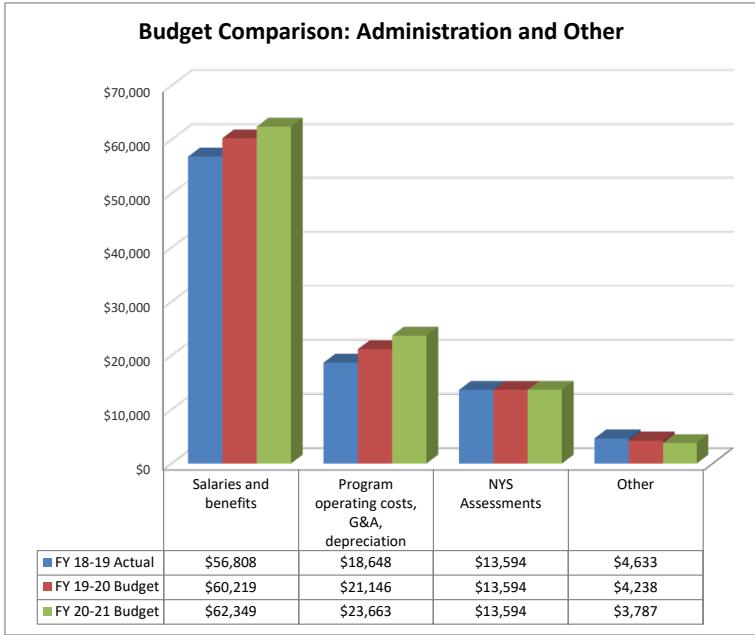
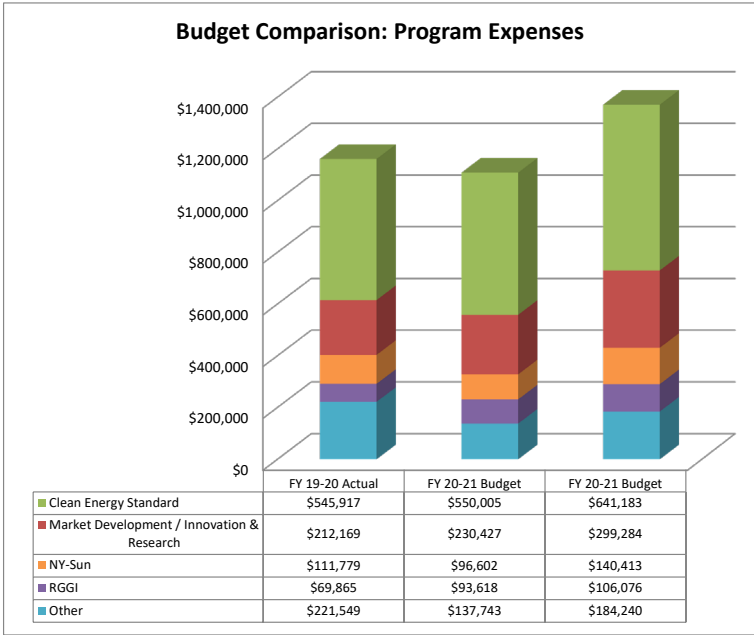
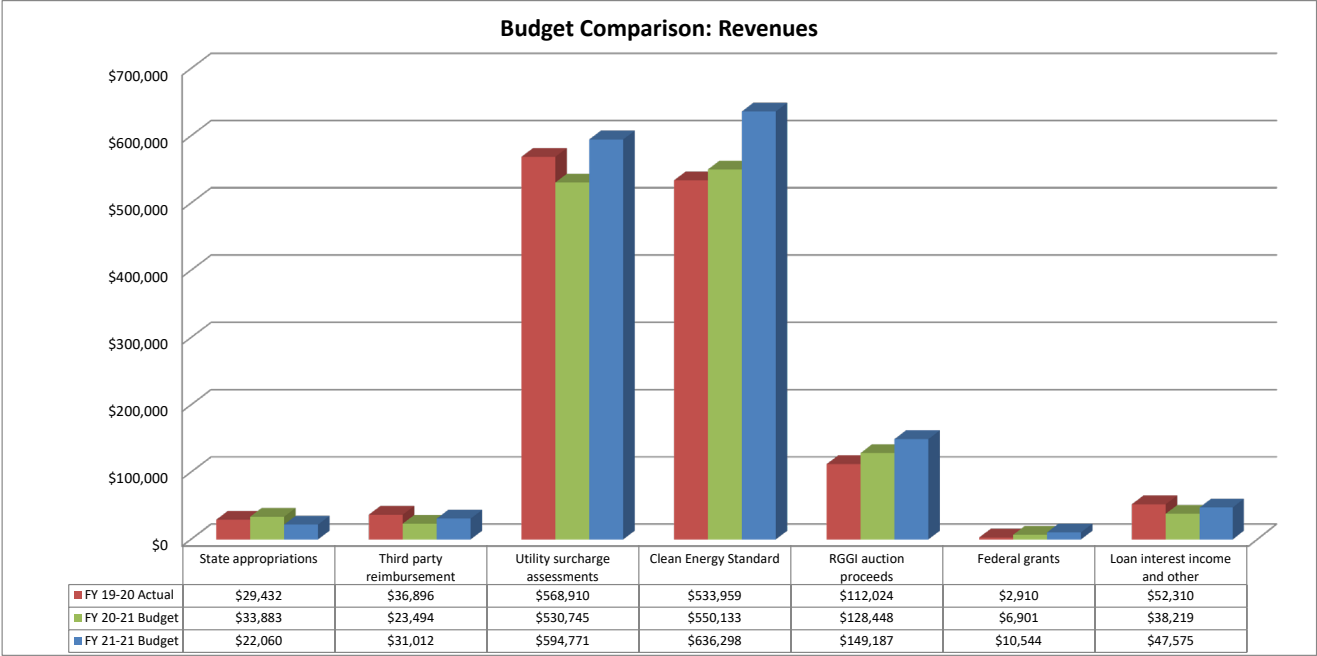
Budget FY 2021-22

(Amounts in thousands)



Budget FY 2021-22

(Amounts in thousands)



NYSERDA
 Budget FY 2021-22
 (Amounts in thousands)

	Budget FY 2021-22	Budget FY 2020-21
Net position beginning of year	\$ 1,410,843	1,079,131
<u>Revenues:</u>		
State appropriations	22,060	33,883
Third party reimbursement	31,012	23,494
Utility surcharge assessments	594,771	530,745
Renewable energy credit proceeds	45,825	9,096
Zero emission credit payments	590,473	541,037
Allowance auction proceeds	149,187	128,448
Project repayments	200	385
Federal grants	10,544	6,901
Rentals from leases	996	986
Interest income	1,002	684
Loan interest	33,907	30,988
QECCB interest subsidy	306	355
Fees and other income	11,164	4,821
Total Revenues	1,491,447	1,311,823
<u>Expenses:</u>		
Salaries and benefits	62,349	60,219
Program expenditures	1,371,196	1,108,395
Investment related expenses	163	348
Program operating costs	4,514	3,598
General & administrative expenses	16,615	14,245
Depreciation	2,534	3,303
NYS Assessments	13,594	13,594
Bond interest and fees	3,624	3,890
Total Expenses	1,474,589	1,207,592
Net (expense) revenue and change in net position	16,858	104,231
<u>Net position end of year:</u>		
Restricted for specific programs	393,370	389,056
NY Green Bank Capitalization	1,017,010	776,208
Net Investment in Capital Assets	12,997	13,767
Unrestricted	4,324	4,331
Total net position end of year	\$ 1,427,701	1,183,362

NYSDA
 Budget FY 2021-22
 (Amounts in thousands)

Functions/Programs										
	Market Development / Innovation & Research	NY Green Bank	NY-Sun	Clean Energy Standard	RGGI	Energy & Environmental Analysis	West Valley	Other	Budget FY 2021-22	Budget FY 2020-21
Net position, beginning of year	\$ 45,362	1,002,329	17,504	(25,114)	133,412	3,101	-	239,941	1,410,843	1,079,131
<u>Revenues:</u>										
State appropriations	-	-	-	-	1,141	143	20,500	276	22,060	33,883
Third party reimbursement	15,000	-	-	-	-	-	2,056	13,956	31,012	23,494
Utility surcharge assessments	295,578	-	152,007	-	-	13,666	-	133,520.74	594,771	530,745
Renewable energy credit proceeds	-	-	-	45,825	-	-	-	-	45,825	9,096
Zero emission credit payments	-	-	-	590,473	-	-	-	-	590,473	541,037
Allowance auction proceeds	-	-	-	-	149,187	-	-	-	149,187	128,448
Project repayments	-	-	-	-	-	-	-	200	200	385
Federal grants	-	-	-	-	-	2,850	-	7,694	10,544	6,901
Rentals from leases	-	-	-	-	-	-	-	996	996	986
Interest income	108	343	61	124	154	-	-	212	1,002	684
Loan interest	-	25,578	-	-	-	-	-	8,329	33,907	30,988
QECB interest subsidy	-	-	-	-	-	-	-	306	306	355
Fees and other income	-	3,967	-	7,000	-	-	-	197	11,164	4,821
Total Revenues	310,685	29,888	152,067	643,422	150,482	16,659	22,556	165,687	1,491,447	1,311,823
<u>Expenses:</u>										
Salaries and benefits	22,794	9,017	2,234	6,028	5,935	5,939	2,633	7,769	62,349	60,219
Program expenditures	299,284	600	140,413	641,183	106,076	8,497	18,794	156,349	1,371,196	1,108,395
Investment related expenses	-	163	-	-	-	-	-	-	163	348
Program operating costs	689	2,716	55	75	4	375	149	451	4,514	3,598
General & administrative expenses	6,073	2,391	595	1,617	1,580	1,577	714	2,068	16,615	14,245
Depreciation	1,133	180	281	166	119	118	58	479	2,534	3,303
NYS Assessments	3,071	140	1,336	6,040	1,058	153	208	1,588	13,594	13,594
Bond interest and fees	-	-	-	-	-	-	-	3,624	3,624	3,890
Total Expenses	333,044	15,207	144,914	655,109	114,772	16,659	22,556	172,328	1,474,589	1,207,592
Net sources / (uses) of net position other than transfers	(22,359)	14,681	7,153	(11,687)	35,710	(1)	-	(6,641)	16,858	104,231
Inter-program transfers	33,789	-	-	-	(45,789)	-	-	12,000	-	-
Net Investment in Capital Assets	(677)	-	(236)	(44)	-	-	(4)	191	(770)	(743)
<u>Net Position End of Year:</u>										
Restricted for specific programs	56,184	-	24,388	(36,853)	123,333	3,101	(200)	223,416	393,370	389,056
NY Green Bank Capitalization	-	1,017,010	-	-	-	-	-	-	1,017,010	776,208
Net Investment in Capital Assets	608	-	269	52	-	-	200	11,868	12,997	13,767
Unrestricted	-	-	-	-	-	-	-	4,324	4,324	4,331
Net position end of year	\$ 56,792	1,017,010	24,657	(36,801)	123,333	3,101	-	239,608	1,427,701	1,183,362

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
State appropriations					
West Valley	\$ 15,043	18,200	2,300	20,500	Reflects an increase in anticipated program expenditures for NYSERDA's share of federal and state spending at West Valley.
Energy & Environmental Analysis - Low-Level Radioactive Waste RGGI	150	150	(8)	143	Reflects a 5% reduction in accordance with Division of the Budget guidelines.
Other Programs - Energy/Environmental projects	1,602	6,169	(5,028)	1,141	Reflects a reduction in anticipated expenditures under the RGGI Cleaner Greener Community program (repayment of the FY 13-14 transfer of \$25 million to the State General Fund) and removal of reimbursement funding for the 76 West initiative which was included in FY 20-21 budget.
Other Programs - Energy/Environmental projects	12,637	9,364	(9,088)	276	Reflects a decrease in anticipated expenditures under a UDC Capital Budget appropriation and reduction in reimbursement funding for a Brookhaven National Lab Energy Storage project which was completed during FY 20-21.
Total state appropriations	29,432	33,883	(11,823)	22,060	
Third party reimbursement	36,896	23,494	7,518	31,012	Reflects an increase in funding to be received under the Federal Government Volkswagen settlement, offset in part by a reduction in reimbursement funding based on anticipated expenditures under the Indian Point Energy Center Reliability Contingency and National Fuel Gas gas efficiency programs.
Utility surcharge assessments					
Market Development/ Innovation & Research NY-Sun	226,809	195,798	99,780	295,578	Increase reflects revenues based on anticipated expenditures under the BAYG approach.
Energy Storage	126,197	80,933	71,074	152,007	Increase reflects revenues based on anticipated expenditures under the "Bill-As-You-Go" (BAYG) approach.
SBC/RPS/(EEPS FY19-20 actuals only)	-	11,888	47,241	59,129	Increase reflects revenues based on anticipated expenditures under the BAYG approach for this program which was authorized by the Public Service Commission in January 2019.
18-a funding	175,526	63,892	1,466	65,358	Decrease reflects revenues based on anticipated expenditures under the BAYG approach, which reflects winding down and closure of legacy SBC, EEPS, and RPS programs.
NY Green Bank	19,700	22,700	-	22,700	(No change)
Total utility surcharge assessments	20,678	155,534	(155,534)	-	NY Green Bank anticipated to fully draw upon ratepayer-funded capitalization during FY20-21.
Renewable energy credit proceeds	568,910	530,745	64,026	594,771	
Zero emission credit assessments	5,613	9,096	36,729	45,825	Reflects an anticipated increase in the number of renewable energy credits to be sold to load serve entities pursuant to newly revised compliance requirements under the existing Clean Energy Standard Tier One and new Tier Two State-mandated compliance programs.
Allowance auction proceeds	528,346	541,037	49,436	590,473	Increase is based on the maximum "zero-emission" credit price established pursuant to the Clean Energy Standard Order of the Public Service Commission (PSC) but the actual subsidy price will be determined prior to April 1, 2021.
Project repayments	112,024	128,448	20,739	149,187	Reflects an increase in both the anticipated allowance price and number of allowances to be auctioned consistent with the FY 21-22 RGGI Operating Plan. The allowance price is based on the September 2020 auction results.
Federal grants	68	385	(185)	200	Reflects a decrease based on anticipated recoupment payments.
Rentals from leases	2,910	6,901	3,643	10,544	Principally reflects a net increase in anticipated reimbursable expenditures under the U.S. Department of Energy (DOE) 'Offshore Wind Consortium' and 'State Energy Program' grants and an increase in a NYS Department of Transportation Congestion Mitigation Air Quality grant, offset in part by decreases in certain DOE energy efficiency special project grants.
Interest income	1,026	986	10	996	(Minor change)
Loan interest - NY Green Bank	18,338	684	318	1,002	Increase is principally due to expected higher investment balances. Yields are based on a one-year U.S. Treasury bond index rate (FY 20-21's assumed rate was .10% and FY 21-22's assumed rate is .12%).
Loan interest - GJGNY	18,612	22,586	2,992	25,578	Reflects an increase in anticipated loan activity.
QECCB interest subsidy	7,739	8,402	(73)	8,329	Reflects a slight decrease increase in anticipated loan activity.
Fees and other income	402	355	(49)	306	Principally due to a lower outstanding principal balance on the 2013 Energy Efficiency Financing Revenue Bonds generating less interest expense qualifying for the subsidy.
Total Revenues:	6,125	4,821	6,343	11,164	Increase principally reflects non-refundable Clean Energy Standard bid fees not budgeted in FY 20-21, offset in part by a decrease in estimated NY Green Bank closing and undrawn fees.
	1,336,441	1,311,823	179,624	1,491,447	

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
<u>Expenses:</u>					
Salaries	39,683	42,768	(1,200)	41,568	Reflects a net decrease in assumed filled positions, partially offset by an assumed 2% cost-of-living adjustment and performance-based salary increases/awards presuming similar awards are approved for NYS employees.
Benefits	17,125	17,451	3,330	20,781	Principally reflects an anticipated increase in pension costs based on most recent FY20-21 actuarial pension expense from NYS Retirement System, as well as, increases in compensated absences and health insurance estimates based on current spending levels.
Total salaries and benefits	56,808	60,219	2,130	62,349	
Program expenditures					
NY-Sun	111,779	96,602	43,811	140,413	Reflects an increase in anticipated expenditures based on project completion dates and timing of incentive payments.
Market Development/ Innovation & Research	212,169	230,427	68,857	299,284	Reflects an overall increase in anticipated program activity resulting from the implementation of an increased number of approved initiatives.
Clean Energy Standard - REC	8,175	8,817	37,008	45,825	Reflects an increase in the projected purchase of renewable energy credits of on-line facilities under the Clean Energy Standard Tier One and Tier Two State-mandated compliance program.
Clean Energy Standard - ZEC	537,742	541,188	49,285	590,473	Represents an increase in payments to zero-emission generation facilities based on the maximum credit price established pursuant to the Clean Energy Standard Order of the Public Service Commission but the actual subsidy price will be determined prior to April 1, 2021.
Other Programs (individually < 5% of total)	202,353	116,084	48,697	164,781	Represents an overall increase in anticipated expenditures primarily for the Energy Storage Program which was authorized by the Public Service Commission in January 2019, offset in part by a decrease in RPS program expenditures from cancelled Main Tier contracts and for reduction in incentive payments for Customer-sited Tier technology projects based on program wind down.
Regional Greenhouse Gas Initiative	69,865	93,618	12,458	106,076	Reflects an increase in anticipated expenditures based on amounts included in the FY 21-22 RGGI Operating Plan.
West Valley	14,126	16,589	2,205	18,794	Reflects an increase in anticipated program expenditures for NYSERDA's share of federal and state spending at West Valley.
NY Green Bank	214	120	480	600	Reflects an increase in anticipated Evaluation expenditures.
Energy & Environmental Analysis	4,856	4,950	-	4,950	(No change)
Total program expenditures	1,161,279	1,108,395	262,801	1,371,196	
Investment related expenses - NY Green Bank	399	348	(185)	163	Represents a decrease in estimated non-reimbursed program related costs to support investment portfolio transactions.
Program operating costs	2,854	3,598	916	4,514	Primarily reflects an increase in temporary service costs for NY Green Bank.
General & administrative expenses	12,818	14,245	2,370	16,615	Reflects an increase in temporary service costs for several administrative departments, an increase in IT software needs, IT professional service costs, and web based storage upgrades, offset in part by a decrease in telecommunications costs.
Depreciation	2,976	3,303	(769)	2,534	Reflects a decrease in projected depreciation on existing capital assets which is offset in part from planned additions in FY 21-22.
NYS Assessments	13,594	13,594	-	13,594	(No change)
Bond interest and fees	4,234	3,890	(266)	3,624	Decrease reflects scheduled interest expense payments based on aggregate outstanding principal balances including the addition of the 2020 Residential Solar and Energy Efficiency Financing Green Revenue Bonds.
Total Expenses:	1,254,962	1,207,592	266,997	1,474,589	

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
Net (expense) revenue and change in net position	81,479	104,231	(87,373)	16,858	
Net position beginning of year	997,652	1,079,131	331,712	1,410,843	Reflects adjustments for known timing differences (in FY 20-21).
<u>Net position end of year:</u>					
Restricted for specific programs	452,462	389,056	4,314	393,370	Primarily from an increase in the anticipated effect of BAYG pursuant to the CEF Order, offset in part by a decrease in the anticipated timing of the Clean Energy Standard revenues and expenditures.
NY Green Bank Capitalization	606,394	776,208	240,802	1,017,010	Reflects the net effect of all undrawn capital, deployed capital, matured/recycled capital, and a cumulative result of revenues exceeding expenditures.
Net Investment in Capital Assets	14,234	13,767	(770)	12,997	Reflects anticipated asset purchases less depreciation.
Unrestricted	6,041	4,331	(7)	4,324	(Minor change)
Total net position end of year	<u>\$ 1,079,131</u>	<u>1,183,362</u>	<u>244,339</u>	<u>1,427,701</u>	

Certain amounts for FY 2019-20 and FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Salaries and benefits
 (Amounts in thousands)

	Actual	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Salaries **	39,683	42,768	(1,201)	41,567
Fringe Benefits:				
Pension	4,444	4,822	1,917	6,739
Compensated absence leave accruals	1,229	473	1,108	1,581
Health insurance	4,394	4,579	237	4,816
Postemployment health insurance (GASB 45/75)	2,608	2,709	113	2,822
NYS Paid Family Leave	38	68	62	130
Workers compensation	81	85	24	109
Unemployment	3	34	6	40
Short-Term Disability	0	0	5	5
Long-term disability insurance	87	90	3	93
Dependent Care plan	14	20	(6)	14
Dental plan	278	337	(10)	327
Voluntary Defined Contribution Plan	1,002	1,072	(15)	1,057
Vision care plan	24	34	(17)	17
Tuition reimbursement	38	35	(28)	7
Social Security/Medicare taxes	2,886	3,093	(68)	3,025
sub-total benefits	<u>17,125</u>	<u>17,451</u>	<u>3,331</u>	<u>20,782</u>
Percentage of Salaries	43.2%	40.8%		50.0%
Total Salaries and Benefits	<u><u>56,808</u></u>	<u><u>60,219</u></u>	<u><u>2,130</u></u>	<u><u>62,349</u></u>
Number of full-time equivalent employees (FTEs)	345.6	362.2	(8.1)	354.1

** Salaries include a 2% cost-of-living-adjustment which was originally scheduled to occur effective April 1, 2020, but has not been authorized by the State. The increase, if approved by NYS, will be in accordance with increases granted for M/C employees. No retroactive salary costs for FY 20-21 have been budgeted as it is uncertain whether a retroactive component will occur but would be paid out if authorized by NYS. Salaries also include performance-based salary increases and payments generally equivalent to salary increases and total salary costs anticipated to be provided for NYS employees.

NYSERDA FY21-22 Budget
 Detail schedule: Program Expenditures
 (Amounts in thousands)

<u>Function/Program</u>	<u>Working Budget *</u>	<u>Budget FY 2020-21</u>	<u>Budget FY 2021-22</u>	<u>Financial Plan FY 2022-23</u>	<u>Financial Plan FY 2023-24</u>	<u>Financial Plan FY 2024-25</u>	<u>Future</u>
Market Development/ Innovation & Research	\$ 2,610,352	230,427	299,284	350,798	351,233	308,582	1,070,029
NY Green Bank	1,915	120	600	535	660	-	-
NY-Sun	1,282,660	96,602	140,413	357,123	358,192	167,670	162,660
Clean Energy Standard - Offshore Wind	5,933,208	1,325	4,885	4,885	34,800	177,600	5,709,712
Clean Energy Standard - REC	4,756,374	14,413	23,603	90,833	134,464	169,029	4,324,032
Clean Energy Standard - REC Tier 2	200,770	-	22,222	40,000	48,889	31,111	58,548
Clean Energy Standard - ZEC	2,323,161	541,188	590,473	590,473	186,650	186,650	227,727
RGGI	456,255	93,618	106,076	106,875	91,104	10,245	48,337
Energy & Environmental Analysis	39,497	7,950	8,497	7,950	7,950	7,150	-
West Valley	91,244	16,589	18,794	18,769	18,618	18,474	-
Other Programs	740,217	106,162	156,350	170,383	103,363	54,232	149,727
Total	\$ 18,435,653	1,108,395	1,371,196	1,738,624	1,335,923	1,130,743	11,750,771

* Working Budget represents approved sponsor funding or amounts anticipated to be approved for future year activity

Certain amounts for FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Program Operating Costs
 (Amounts in thousands)

	Actuals	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Temporary Staffing, Outside Technical Reviewer	152	208	947	1,155
Office Supplies, Equipment Rental, and Other	292	292	131	423
Computer Services and Software	313	336	82	418
Rent, Maintenance & Repairs, Utilities, Insurance	403	415	8	423
Training, Recruitment & Relocation	0	61	(3)	59
Travel and Outreach Costs	440	595	(39)	555
Professional Services:				
STEP & Other Consulting	50	35	17	52
NY Green Bank	1,204	1,656	(227)	1,429
Total Professional Services	<u>1,254</u>	<u>1,691</u>	<u>(210)</u>	<u>1,481</u>
Total Program Operating Costs	<u><u>2,854</u></u>	<u><u>3,598</u></u>	<u><u>916</u></u>	<u><u>4,514</u></u>

NYSERDA FY 2021-22 Budget

Detail schedule: General & Administrative Expenses

(Amounts in thousands)

	Actuals	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Temporary Staffing, Outside Technical Reviewer	3,755	3,059	971	4,030
Computer Services and Software	2,862	3,424	915	4,339
Rent, Maintenance & Repairs, Utilities, Insurance	3,196	3,398	300	3,698
Professional Services:				
Website support services	420	380	160	540
Information Technology	1,056	2,069	27	2,096
Fiscal Agent, audit and third-party payroll and Human Resource services	513	542	17	559
Other Consulting	176	66	40	106
Internal Audit support services	1	50	-	50
Marketing	133	280	-	280
Communication and consumer support services	132	150	-	150
Total Professional Services	<u>2,431</u>	<u>3,537</u>	<u>244</u>	<u>3,781</u>
Training, Recruitment & Relocation	109	305	(3)	302
Travel and Outreach Costs	263	247	(12)	236
Office Supplies, Equipment Rental, and Other	202	275	(46)	229
Total General & Administrative Expense	<u><u>12,818</u></u>	<u><u>14,245</u></u>	<u><u>2,369</u></u>	<u><u>16,615</u></u>

Certain amounts for FY 2019-20 and FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Capital Budget
 (Amounts in thousands)

	<u>Actual</u> <u>FY 2019-20</u>	<u>Budget</u> <u>FY 2020-21</u>	<u>Change</u>	<u>Budget</u> <u>FY 2021-22</u>
Building improvements	-	260	701	961
Information technology upgrades	293	345	450	795
Furniture, fixtures and equipment	172	-	7	7
Leasehold improvements	20	-	-	-
STEP infrastructure	13	30	(30)	-
Vehicles	-	40	(40)	-
Clean Energy Fund system development costs	795	1,600	(1,600)	-
Total Capital Asset Additions	<u>1,293</u>	<u>2,275</u>	<u>(512)</u>	<u>1,763</u>

Certain amounts for FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Debt Schedule
 (Amounts in thousands)

Purpose: Refinancing of loans issued through the Green Jobs-Green New York financing program

	<u>Principal Issued</u>	<u>Anticipated Total Debt Service</u>	<u>Pledged Revenues</u>	<u>Debt service % of Pledged Revenues</u>	<u>FY 21-22 Debt Service</u>	<u>FY 21-22 Outstanding Principal</u>	<u>FY 22-23 Debt Service</u>	<u>FY 22-23 Outstanding Principal</u>	<u>FY 23-24 Debt Service</u>	<u>FY 23-24 Outstanding Principal</u>
Residential Energy Efficiency Financing Revenue Bonds										
Series 2013A (NYS EFC Guarantee)	24,300	29,651	37,436	79.2%	2,133	8,880	1,892	7,290	1,697	5,845
Series 2015A	46,358	53,824	67,991	79.2%	3,738	27,310	3,660	24,210	3,657	21,050
Series 2016A	23,180	27,539	34,473	79.9%	2,017	15,695	1,859	14,190	1,785	12,730
Residential Solar Loan Revenue Bonds, Series 2015A	48,536	75,406	86,927	86.7%	3,843	17,081	3,813	14,031	3,292	11,353
Residential Solar Loan Revenue Bonds, Series 2018A	18,500	21,908	30,732	71.3%	2,018	12,175	1,967	10,675	1,720	9,375
Residential Solar and Energy Efficiency Financing Green Revenue Bonds, Series 2019A	15,510	18,339	21,257	86.3%	1,844	11,700	1,736	10,380	1,630	9,125
Residential Solar and Energy Efficiency Financing Green Revenue Bonds, Series 2020A	<u>16,690</u>	<u>19,859</u>	<u>22,611</u>	87.8%	<u>2,287</u>	<u>14,785</u>	<u>2,415</u>	<u>12,720</u>	<u>2,137</u>	<u>10,900</u>
Total	193,074	246,526	301,427	81.8%	17,880	107,626	17,342	93,496	15,918	80,378

Proposed New Debt *

* No new debt issues are included in the Budget and Financial Plan as additional debt issues will require approval by the NYSERDA Board and the Public Authorities Control Board.

NYSERDA
 Budget FY 2021-22
 Financial Plan
 (Amounts in thousands)

	FY 2021-22 Budget	FY 2022-23 Projection	FY 2023-24 Projection	FY 2024-25 Projection
REVENUES:				
State appropriations	\$ 22,060	22,763	23,496	22,518
Third party reimbursement	31,012	29,056	29,056	29,056
Utility surcharge assessments	594,771	934,287	843,731	538,780
Renewable energy credit proceeds	45,825	91,236	188,051	354,283
Zero emission credit payments	590,473	590,473	186,650	186,650
Allowance auction proceeds	149,187	143,175	132,632	132,632
Federal grants	10,544	12,123	8,015	6,524
Other income	47,575	47,030	52,937	58,964
TOTAL REVENUES	1,491,447	1,870,142	1,464,568	1,329,406
EXPENSES:				
Salaries and benefits	62,349	64,219	66,146	68,130
Program expenditures	1,371,196	1,738,624	1,335,923	1,130,743
Investment related expenses	163	370	377	385
Program operating costs	4,514	4,671	4,791	4,924
General & administrative expenses	16,615	16,601	17,098	17,612
Depreciation	2,534	2,097	1,712	1,386
NYS assessments	13,594	13,594	13,594	13,594
Bond interest and fees	3,624	3,213	2,800	2,419
TOTAL EXPENSES	1,474,589	1,843,390	1,442,441	1,239,195
Net (expense) revenue and change in net position	16,858	26,753	22,126	90,212
Net position beginning of year	1,410,843	1,427,701	1,454,454	1,476,580
Total net position end of year	\$ 1,427,701	1,454,454	1,476,580	1,566,792

NYSERDA
 FY 2021-22 Cash-Based Budget
 (Amounts in thousands)

	Functions/Programs								FY 21-22 Cash Budget Total Total
	Market Development / Innovation & Research	NY Green Bank	NY-Sun	Clean Energy Standard	RGGI	Energy & Environmental Analysis	West Valley	Other	
RECEIPTS:									
State appropriations	\$ -	-	-	-	1,141	143	20,500	276	22,060
Third party reimbursement	15,000	-	-	-	-	-	2,056	13,956	31,012
Utility surcharge assessments	295,578	-	152,007	-	-	13,666	-	133,521	594,771
Renewable energy credit proceeds	-	-	-	45,825	-	-	-	-	45,825
Zero emission credit payments	-	-	-	590,473	-	-	-	-	590,473
Allowance auction proceeds	-	-	-	-	149,187	-	-	-	149,187
Project repayments	-	-	-	-	-	-	-	200	200
Federal grants	-	-	-	-	-	2,850	-	7,694	10,544
Rentals from leases	-	-	-	-	-	-	-	996	996
Interest income	108	343	61	124	154	-	-	212	1,002
Loan interest	-	25,578	-	-	-	-	-	8,329	33,907
Loan principal repayments	-	187,553	-	-	-	-	-	18,653	206,206
QECB interest subsidy	-	-	-	-	-	-	-	306	306
Fees and other income	-	3,967	-	7,000	-	-	-	197	11,164
TOTAL REVENUES	310,685	217,441	152,067	643,422	150,482	16,659	22,556	184,340	1,697,653
DISBURSEMENTS:									
Salaries and benefits	22,794	9,017	2,234	6,028	5,935	5,939	2,633	7,769	62,349
Program expenditures	299,284	600	140,413	641,183	106,076	8,497	18,778	156,349	1,371,180
Investment related expenses	-	163	-	-	-	-	-	-	163
Other Operating costs	689	2,716	55	75	4	375	149	451	4,514
General & administrative expenses	6,073	2,391	595	1,617	1,580	1,577	714	2,068	16,615
Capital asset additions	645	255	63	171	168	168	74	219	1,763
Deployed Capital	-	234,163	-	-	-	-	-	-	234,163
Bond interest and fees	-	-	-	-	-	-	-	3,624	3,624
Principal bond payment	-	-	-	-	-	-	-	14,256	14,256
Loan purchases	-	-	-	-	-	-	-	32,318	32,318
NYS Assessments	3,071	140	1,336	6,040	1,058	153	208	1,588	13,594
TOTAL EXPENSES	332,556	249,445	144,696	655,114	114,821	16,709	22,556	218,641	1,754,538
Net (expense) revenue and change in cash position	(21,871)	(32,004)	7,371	(11,692)	35,661	(51)	-	(34,301)	(56,885)
Cash and investments, beginning of year	58,729	298,038	29,950	114,213	119,142	3,493	-	101,472	725,037
Inter-program transfers	33,789	-	-	-	(45,789)	-	-	12,000	-
Cash and investments, end of year	\$ 70,648	266,034	37,321	102,521	109,014	3,442	-	79,172	668,152

Resolution No. _____

RESOLVED, that the proposed fiscal year 2021-22 Budget and Financial Plan submitted to the Members for consideration at this meeting, with such non-material, editorial changes and supplementary schedules as the Acting President and Chief Executive Officer, in her discretion, may deem necessary or appropriate, be and it hereby is recommended for approval by the Board for submission to the persons designated in Sections 1867(4) and 2801 of the Public Authorities Law.

**NUCLEAR
COORDINATION
REPORT**

Resolution No. _____

RESOLVED, that pursuant to Section 108 of the Public Officers Law, the Members shall convene in private session on February 3, 2021 for the purpose of discussing attorney-client privileged matters.



NYSERDA

ANDREW M. CUOMO
Governor

RICHARD L. KAUFFMAN
Chair

DOREEN M. HARRIS
Acting President and CEO

REVISED NOTICE OF MEETING AND AGENDA

January 25, 2021

TO THE GUESTS OF THE NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY:

PLEASE TAKE NOTICE that a regular (the 250th) meeting of the New York State Energy Research and Development Authority (“Authority”) will be held via video conference, on Wednesday, February 3, 2021, commencing at 3:00 p.m., for the following purposes:

I. *Discussion Agenda*

1. To receive a report from the Authority’s Acting President and CEO.
2. To consider and act upon a resolution approving the Authority’s FY 2021-2022 Budget.
3. To receive a report from the Waste and Facilities Management Committee.
4. To receive a report from the Program Planning Committee and:
 - a. To consider and act upon a resolution approving the strategic plan entitled *Toward A Clean Energy Future – A Strategic Outlook 2021-2024*; and
 - b. To consider and act upon a resolution approving revisions to the plan entitled *Operating Plan for Investments in New York Under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Program*.
5. To receive a report from NY Green Bank.
6. To receive a Program Report.

II. *Consent Agenda*

1. To consider and act upon resolutions approving:
 - a. amendments to the Authority’s By-laws; and
 - b. the periodic contracts report.

New York State Energy Research and Development Authority

Albany
17 Columbia Circle, Albany, NY 12203-6399
(P) 1-866-NYSERDA | (F) 518-862-1091
nysesda.ny.gov | info@nysesda.ny.gov

Buffalo
726 Exchange Street
Suite 821
Buffalo, NY
14210-1484
(P) 716-842-1522
(F) 716-842-0156

New York City
1359 Broadway
19th Floor
New York, NY
10018-7842
(P) 212-971-5342
(F) 518-862-1091

**West Valley Site
Management Program**
9030-B Route 219
West Valley, NY
14171-9500
(P) 716-942-9960
(F) 716-942-9961

III. *To transact such other business as may properly come before the meeting.*

As the Authority continues to follow the guidance for addressing the impacts of COVID-19, Members of the public may attend the meeting via the video conference which can be accessed at <https://www.nyserda.ny.gov/About/Board-Governance/Board-and-Committee-Meetings>.

The Authority will be posting a video and a transcript of the meeting to the web as soon as practicable after the meeting. The video and transcript will be posted at <http://www.nyserda.ny.gov/About/Board-Governance/Board-and-Committee-Meetings>.

A handwritten signature in blue ink that reads "Peter Costello". The signature is written in a cursive style with a large initial "P".

Peter J. Costello
Secretary

DRAFT

New York State Energy Research and Development Authority

Fiscal Year 2021-22 Budget and Financial Plan

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20	Budget Detail Schedule: Debt Schedule
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22	Fiscal Year 2021-22 Cash-Based Budget

CERTIFICATION

DRAFT

I hereby certify that, to the best of my knowledge and belief after reasonable inquiry, the budget information contained herein for the fiscal year ending March 31, 2022 has been developed based on reasonable assumptions and methods of estimation.

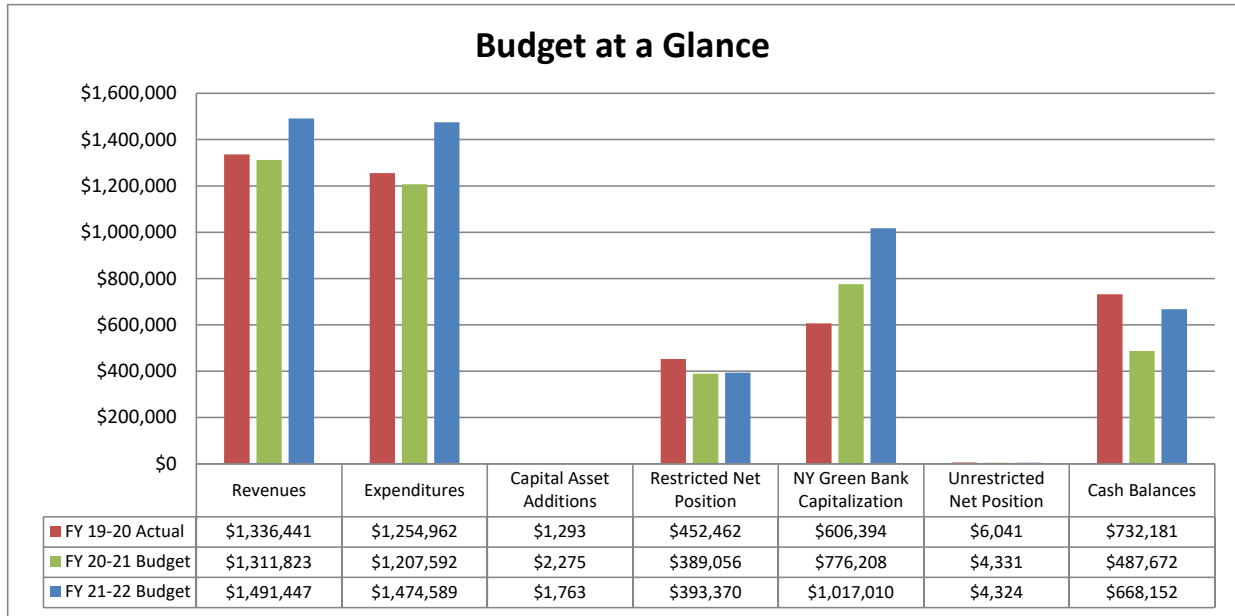


Doreen M. Harris
Acting President and Chief Executive Officer



Jeffrey J. Pitkin
Treasurer and Chief Financial Officer

Budget FY 2021-22
(Amounts in thousands)



INTRODUCTION

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation established in 1975 pursuant to Title 9 of Article 8 of the Public Authorities Law of the State of New York. NYSERDA is a component unit of the State of New York and, as such, the results of operation are reported in the State of New York's Comprehensive Annual Financial Report.

The Budget for the fiscal year ending March 31, 2022 (FY 2021-22), and the Financial Plan for FY's 2022-23 to 2024-25 were prepared in accordance with accounting principles generally accepted in the United States of America.

PROGRAM SUMMARY

Following is a summary of the functions/activities included in the Budget:

Clean Energy Fund (CEF)

Pursuant to a January 2016 Order (CEF Order), the Public Service Commission (PSC) authorized a ten-year commitment through 2025 of approximately \$5.322 billion to clean energy programs through a CEF. The CEF is designed to meet four primary objectives: greenhouse gas emission reductions; energy affordability; statewide penetration and scale of energy efficiency and clean energy generation; and growth in the State's clean energy economy.

The CEF Order provided for a ten-year funding authorization of \$3.43 billion for the Market Development and Innovation & Research activities, and also provided for additional funding authorization of \$781.5 million for the NY Green Bank, \$960.6 million for NY-Sun, and \$150 million for the Renewable Portfolio Standard Program for a 2016 Main Tier solicitation. The NY-Sun and NY Green Bank programs are presented as separate Programs/Functions in the budget document as further described below.

Market Development and Innovation & Research

The CEF Market Development activities are designed to reduce costs, accelerate customer demand, and increase private investment for energy efficiency and other behind-the-meter clean energy solutions through strategies including financial support, technical knowledge, data, education to customers and service providers, and advanced workforce training. The CEF Innovation & Research activities are designed to invest in cutting-edge technologies that will meet increasing demand for clean energy including: smart grid technology, renewables and distributed energy resources, high performance buildings, transportation, and clean tech startup and innovation development.

NY-Sun

Approved through a 2012 PSC Order, the NY-Sun program is designed to develop a sustainable and subsidy-free solar electric industry through a megawatt block approach. The NY-Sun program was initially funded through \$216 million reallocated under the RPS program; as a result, certain expenditures for the NY-Sun program are included in the RPS program in the budget. The CEF Order established the incremental collection schedule by utilities and reallocation of NYSERDA clean energy uncommitted funds to support program activities approved through the 2012 Order. A May 2020 Order was approved by the PSC to increase the NY-Sun funding level by \$573 million to expand the capacity target from 3 GW by 2023 to 6 GW by 2025.

NY Green Bank

The key elements of NY Green Bank's mission are collaborating with private sector participants, implementing structures that overcome barriers and address gaps in current clean energy financing markets, and transforming those markets by enabling greater scale, new and expanded asset classes and liquidity. These factors combined have the objectives to motivate faster and more extensive implementation of clean energy assets within New York State, foster greater energy choices, reduce environmental impacts and accrue more green energy advantages per public dollar spent for the benefit of all New Yorkers.

NY Green Bank's initial capitalization was established from \$315.6 million in uncommitted utility surcharge assessment funds and \$52.9 million from RGGI revenues (which was subsequently redeemed to support NYSERDA's statewide energy storage initiative). As discussed above, the CEF Order authorized incremental collections for the remaining \$631.5 million of NY Green Bank's capitalization.

Clean Energy Standard (CES)

Pursuant to an August 2016 and subsequent Orders, the Clean Energy Standard was established adopting a State Energy Plan goal that 50% of New York's electricity is to be generated by renewable sources by 2030, as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030. The mandated actions are divided into two categories, a Renewable Energy Standard (RES) and a Zero-Emissions Credit (ZEC) requirement. The RES directs NYSERDA to procure renewable energy credits from renewable energy generation from qualifying facilities through competitively selected long-term contracts, and to offer such credits for periodic sale to Load Serving Entities (LSE) to meet their obligations to serve their retail customers through the procurement of a minimum percentage of qualifying renewable energy credits. The RES also includes an obligation on distribution utilities on behalf of all retail customers to continue to invest in the maintenance of existing at-risk renewable generation attributes and a program to maximize the value potential of new offshore wind resources. The ZEC requirement consists of an obligation for NYSERDA to provide payments to certain nuclear generation facilities for the production of zero-emissions attributes from such facilities, funded from monthly installment payments collected from LSEs for their proportionate share of such attributes to serve their retail customers evidenced by the procurement of qualifying zero emission credits. In October 2020 the PSC approved an Order adopting modifications to the Clean Energy Standard to implement New York's Climate Leadership and Community Protection Act. The Order allows for a continuation of Tier 1 solicitations to ensure that 70% of the load in 2030 is served by renewable resources, NYSERDA will create a new competitive Tier 2 program to ensure the continued availability of legacy baseline resources to meet the State's renewable energy goals, NYSERDA will also create a new competitive Tier 4 program to increase penetration of renewable energy in New York City and reducing reliance on fossil fuel usage, and NYSERDA will continue to conduct annual offshore wind solicitations to achieve the statewide goal of 9 GW by 2035.

Regional Greenhouse Gas Initiative (RGGI)

The Regional Greenhouse Gas Initiative, or RGGI, is an agreement among nine Northeastern and Mid-Atlantic States to reduce greenhouse gas emissions from power plants. The RGGI states (Participating States) have committed to cap and then reduce the amount of carbon dioxide that certain power plants are allowed to emit, limiting the region's total contribution to atmospheric greenhouse gas levels. The Participating States have agreed to implement RGGI through a regional cap-and-trade program whereby the Participating States have agreed to auction annual

regional emissions. Rules and regulations promulgated by the NYS Department of Environmental Conservation (DEC) call for NYSERDA to administer periodic auctions for annual emissions. Pursuant to these regulations, the proceeds will be used by NYSERDA to administer energy efficiency, renewable energy, and/or innovative carbon abatement programs, and to cover the costs to administer such programs.

West Valley

NYSERDA manages, on behalf of the State, the Western New York Nuclear Service Center (West Valley), which is the site of a former plant for reprocessing used nuclear fuel. Through 1972, the former plant operator, Nuclear Fuel Services, Inc., generated as a by-product of its reprocessing operations, more than 600,000 gallons of liquid, high-level radioactive waste, which were stored at the site. In 1980, Congress enacted the West Valley Demonstration Project Act (West Valley Act). Pursuant to the West Valley Act, the U.S. Department of Energy (DOE) is carrying out a demonstration project to: (1) solidify the liquid high-level radioactive waste at West Valley; (2) transport the solidified waste to a permanent federal repository; and (3) decontaminate and decommission the reprocessing plant and the facilities, materials, and hardware used in the project. NYSERDA and the Federal government share the combined expenses incurred for this program.

NYSERDA also maintains, on behalf of the State, the State-Licensed Disposal Area (SDA), which is a shut-down commercial low-level radioactive waste disposal facility at West Valley. NYSERDA is evaluating how to remediate and close this facility in accordance with regulatory requirements.

Energy and Environmental Analysis

Through this program, NYSERDA provides objective and credible analyses of energy issues to various stakeholders. The program also includes activities for energy-related emergency planning and response, and support for State energy planning functions.

NYSERDA is also responsible for coordination of nuclear material matters, including serving as the State liaison with the Nuclear Regulatory Commission.

These activities are primarily funded through an assessment authorized under Section 18-a of Public Service Law and a Federal State Energy Plan grant.

Pursuant to the State Low-Level Radioactive Waste (LLRW) Management Act of 1986, NYSERDA is responsible for collecting information and providing regular reports to the Governor and Legislature on LLRW generation in the State. These activities are funded with a State appropriation sub-allocated from an appropriation provided to the NYS Department of Health, which is funded through an assessment collected on operating nuclear power plant licensees.

Other

Other programs represent an aggregate of smaller programs/functions. These activities are primarily funded through Commission Orders, Memorandum of Understanding with various utilities pursuant to Commission Orders, various third-party reimbursements, federal energy grants, State appropriations and assessments authorized under Section 18-a of the Public Service Law.

BUDGETARY ASSUMPTIONS

The following are the principal budget assumptions used in developing the Budget and Financial Plan:

- The CEF Order established a “Bill-As-You-Go” approach for revenue collection effective January 1, 2016. Under this approach, incremental CEF ratepayer collections and the previously approved collections for New York Energy Smart, Technology and Market Development, and Renewable Portfolio Standard programs not yet paid to NYSERDA, will be held by the electric and gas utilities and used to reimburse NYSERDA for actual CEF program expenses and NY Green Bank committed capital through a monthly reimbursement process, provided that the reimbursement allows NYSERDA to maintain a sufficient cash balance based on projected expenses for the subsequent two-month period, subject to the utilities’ unremitted collection balances approved in the CEF Order. Utility surcharge assessments revenue is based on anticipated expenditures and NY Green Bank committed capital, prior fiscal year projected cash balances, and the resulting collections projected to maintain working capital pursuant to this approach.
- NY Green Bank loan interest and fees are based on estimates of committed and deployed capital.
- Allowance auction proceeds for the Regional Greenhouse Gas Initiative (RGGI) are based on the allowance price realized in the September 2020 auction .
- West Valley’s State appropriation revenue for FY 2021-22 through FY 2024-25 is based primarily on the State’s 10% share of West Valley Demonstration Project costs and the State’s share under the Consent Decree. These estimates assume future U.S. Department of Energy (DOE) annual funding of approximately \$92.4 million for FY 2021-22 through FY 2024-25, for its share of project costs.
- Interest income is based on assumed balances available for investment and based on a one-year U.S. Treasury bond index yield.
- GJGNY budgeted loan interest income assumes additional loans to be issued during FY 2021-22 of up to \$32.3 million based on current loan origination volume.
- Salary costs for current staff and funded vacant positions expected to be filled are based on salary grades equivalent to the State Management/Confidential (M/C) employees. Salaries include a 2% cost-of-living-adjustment which was originally scheduled effective April 1, 2020, but has not yet been authorized by the State. The increase, if approved by NYS, will be in accordance with increases granted for M/C employees. No retroactive salary costs for FY 20-21 have been budgeted as it is uncertain whether a retroactive component will occur but would be paid out if authorized by NYS. Salaries also include performance-based salary increases and payments comparable to those which may be authorized for state employees.
- Fringe benefit costs are generally based on prior year actual costs as a percentage of salary costs. Due to market declines in March of 2020, NYSERDA’s actuarially-determined pension expense allocated from the NYS Retirement System increased by \$4.2 million in FY 2019-20 to \$9.0 million for FY 2020-21. Since the market has rebounded from the March 2020 decline, NYSERDA anticipates next year’s actuarially-determined pension expense to decrease, and possibly return to previous levels, but the actuarial calculation is dependent upon multiple conditions/assumptions at a particular point in time (March 31, 2021). The FY 2021-22 assumption of \$6.7 million is an average of the past two years to be conservative. The OPEB expense under Governmental Accounting Standards Board Statement No. 75 in the FY 2021-22 Budget is based on preliminary actuarial estimates calculated, but the final amount may differ once a final actuarial calculation is prepared.

- The NYS Cost Recovery Fee represents the fee paid to the State under Section 2975 of the Public Authorities Law (Governmental Cost Recovery System) for general governmental services. The FY 2020-21 Budget assumes that NYSERDA's assessment will be \$12.7 million, which is based on the prior year assessed value.
- The Budget includes no significant or non-recurring revenue-enhancement or cost-reduction initiatives which shift resources from one year to another.

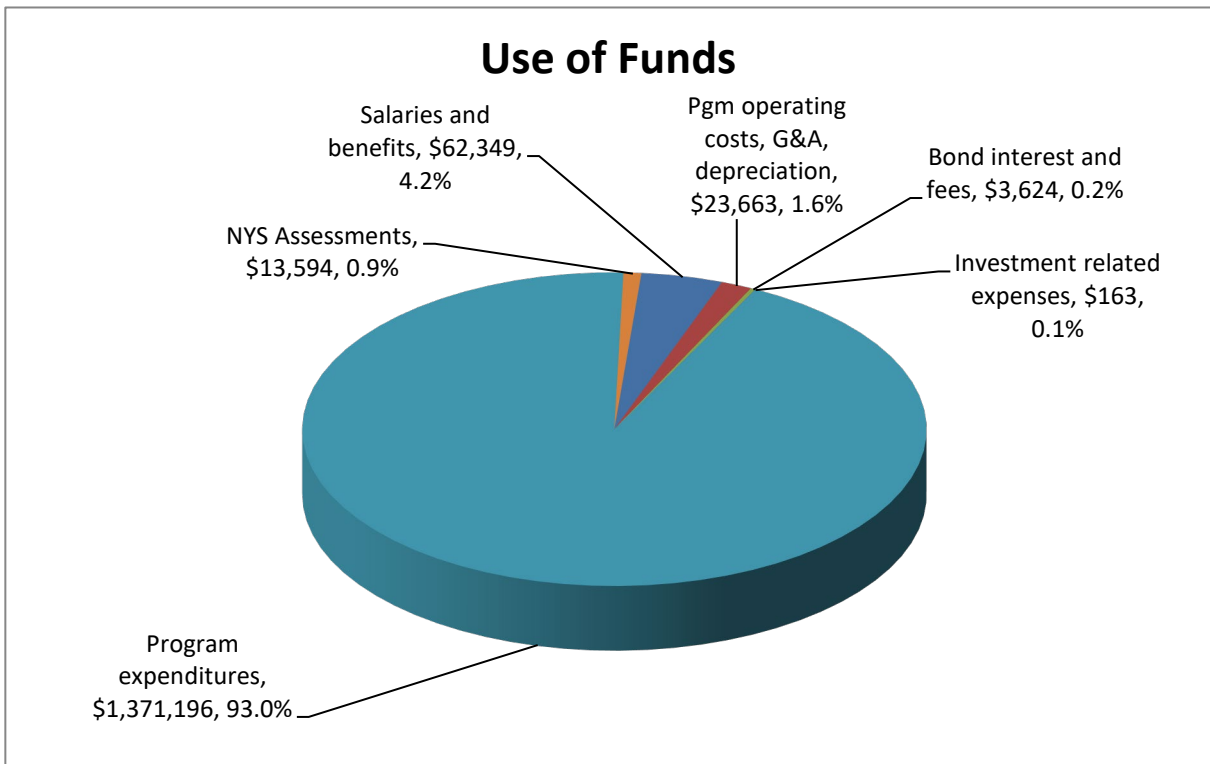
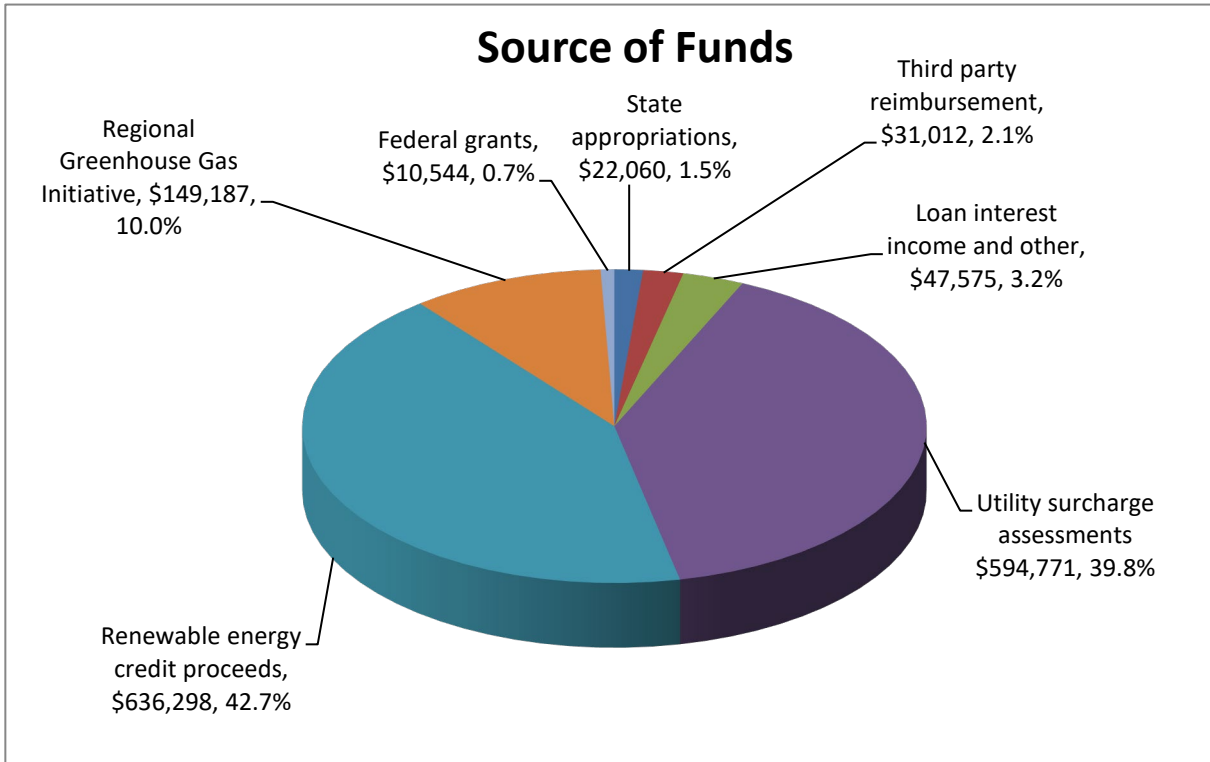
BUDGETARY RISKS

The following is a summary of significant budgeting risks:

- NYSERDA's budgeting process is subject to inherent risks regarding the ability to accurately forecast revenues and expenditures.
- Over the past several years, NYSERDA has assumed responsibility for administering certain new programs, and additional program responsibilities may be added during FY 2021-22 that have not been included in the Budget.
- Revenues resulting from auctions of allowances under the Regional Greenhouse Gas Initiative (RGGI) have shown some volatility over the past few years. NYSERDA has developed a multi-year program planning approach for these revenues, but variations in actual proceeds realized makes it difficult to complete accurate long-term planning.
- Program expenditures for most programs are funded with revenues which are generally received in advance of expenditures. Under the modified accrual basis of accounting, these funds are recorded as revenue when received, with any unexpended funds recorded as Restricted Net Position. Timing of program activity may result in either: (1) revenues exceeding expenses during the Budget period; or (2) expenditures funded in part, by unexpended revenues from prior fiscal periods. It is anticipated that under the CEF BAYG approach NYSERDA will see more consistency in recording revenues in the same time period that expenditures are incurred.
- Expenditures for the West Valley program are based primarily on the amount anticipated to meet the State's share of costs for West Valley under the Cooperative Agreement and the Consent Decree which are dependent upon funds provided in the federal budget to the U.S. Department of Energy (DOE).
- Although DOE and NYSERDA have reached agreement on the allocation of costs (percentages) to be paid by each entity for remediating the West Valley site, the remedial action decisions for several significant facilities will not be finalized prior to 2023. In addition, DOE has taken the position that State will be responsible for waste disposal fees when high level waste on-site reaches an ultimate repository destination, a figure to be calculated at the time of disposal pursuant to the Nuclear Waste Policy Act, 42 U.S.C. 10101 et seq. The agreement between the parties left this issue unresolved, as no national repository option will be in place for many years. Although NYSERDA has advanced, and will continue to advance, legal arguments as to why this responsibility is not one that rightfully falls on the State, additional State funding may be required once the issue is resolved.
- Pension costs and retirement health insurance costs are based on actuarial valuations, and such valuations could be impacted by a number of assumptions, general economic conditions, and future events which could lead to variances from estimated annual expenses.

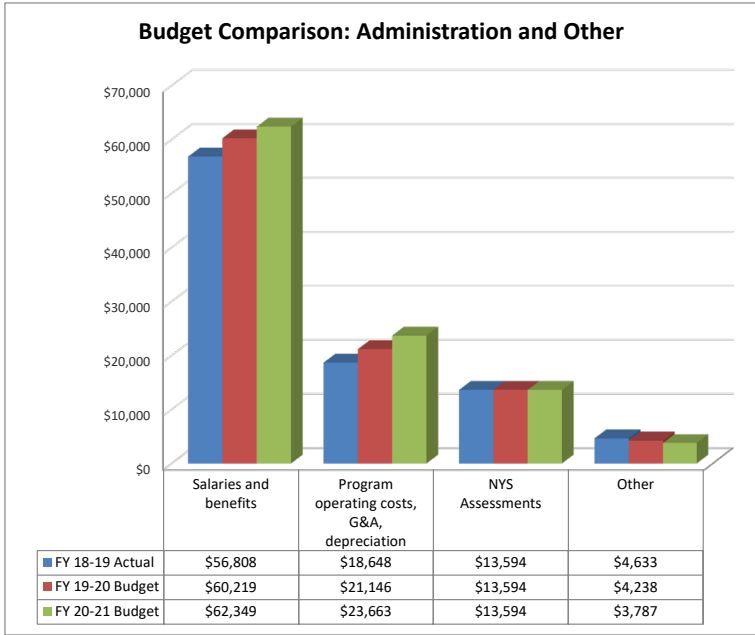
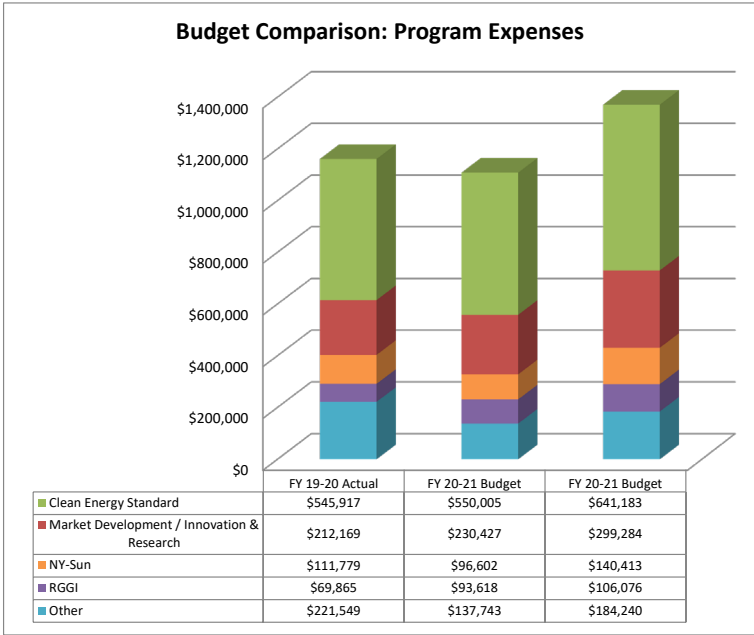
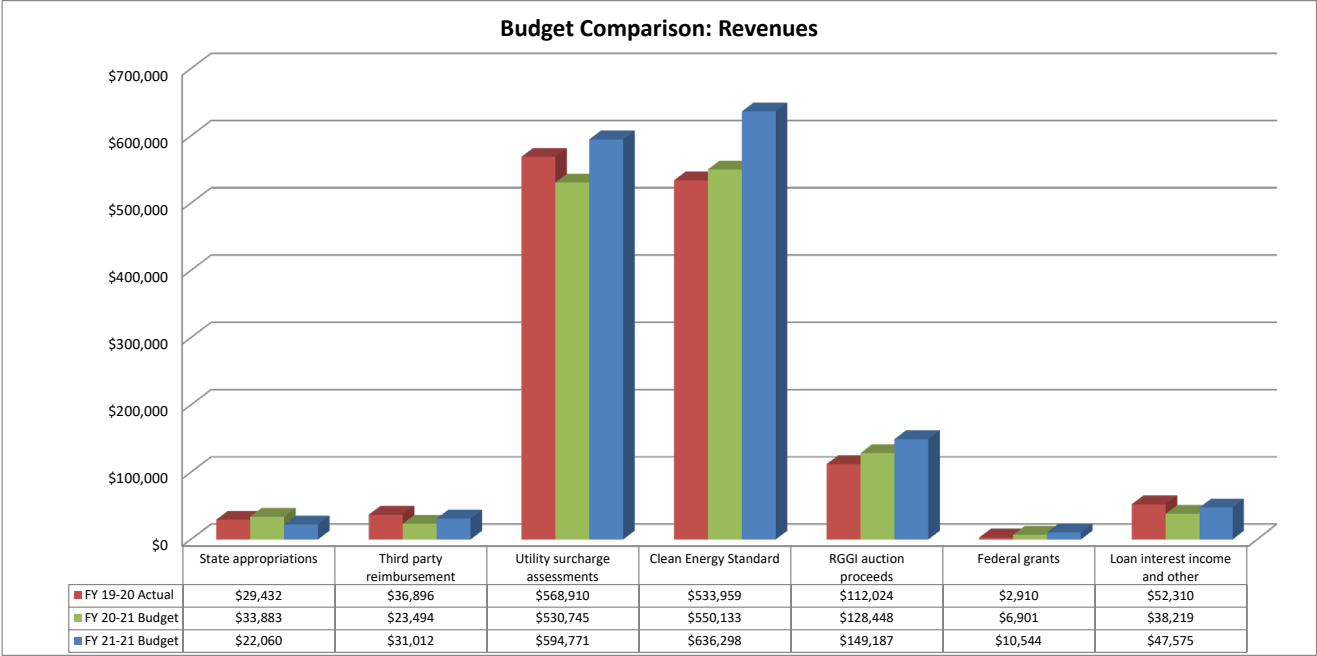
Budget FY 2021-22

(Amounts in thousands)



Budget FY 2021-22

(Amounts in thousands)



NYSERDA
 Budget FY 2021-22
 (Amounts in thousands)

	Budget FY 2021-22	Budget FY 2020-21
Net position beginning of year	\$ 1,410,843	1,079,131
<u>Revenues:</u>		
State appropriations	22,060	33,883
Third party reimbursement	31,012	23,494
Utility surcharge assessments	594,771	530,745
Renewable energy credit proceeds	45,825	9,096
Zero emission credit payments	590,473	541,037
Allowance auction proceeds	149,187	128,448
Project repayments	200	385
Federal grants	10,544	6,901
Rentals from leases	996	986
Interest income	1,002	684
Loan interest	33,907	30,988
QECCB interest subsidy	306	355
Fees and other income	11,164	4,821
Total Revenues	1,491,447	1,311,823
<u>Expenses:</u>		
Salaries and benefits	62,349	60,219
Program expenditures	1,371,196	1,108,395
Investment related expenses	163	348
Program operating costs	4,514	3,598
General & administrative expenses	16,615	14,245
Depreciation	2,534	3,303
NYS Assessments	13,594	13,594
Bond interest and fees	3,624	3,890
Total Expenses	1,474,589	1,207,592
Net (expense) revenue and change in net position	16,858	104,231
<u>Net position end of year:</u>		
Restricted for specific programs	393,370	389,056
NY Green Bank Capitalization	1,017,010	776,208
Net Investment in Capital Assets	12,997	13,767
Unrestricted	4,324	4,331
Total net position end of year	\$ 1,427,701	1,183,362

NYSDA
 Budget FY 2021-22
 (Amounts in thousands)

Functions/Programs										
	Market Development / Innovation & Research	NY Green Bank	NY-Sun	Clean Energy Standard	RGGI	Energy & Environmental Analysis	West Valley	Other	Budget FY 2021-22	Budget FY 2020-21
Net position, beginning of year	\$ 45,362	1,002,329	17,504	(25,114)	133,412	3,101	-	239,941	1,410,843	1,079,131
<u>Revenues:</u>										
State appropriations	-	-	-	-	1,141	143	20,500	276	22,060	33,883
Third party reimbursement	15,000	-	-	-	-	-	2,056	13,956	31,012	23,494
Utility surcharge assessments	295,578	-	152,007	-	-	13,666	-	133,520.74	594,771	530,745
Renewable energy credit proceeds	-	-	-	45,825	-	-	-	-	45,825	9,096
Zero emission credit payments	-	-	-	590,473	-	-	-	-	590,473	541,037
Allowance auction proceeds	-	-	-	-	149,187	-	-	-	149,187	128,448
Project repayments	-	-	-	-	-	-	-	200	200	385
Federal grants	-	-	-	-	-	2,850	-	7,694	10,544	6,901
Rentals from leases	-	-	-	-	-	-	-	996	996	986
Interest income	108	343	61	124	154	-	-	212	1,002	684
Loan interest	-	25,578	-	-	-	-	-	8,329	33,907	30,988
QECB interest subsidy	-	-	-	-	-	-	-	306	306	355
Fees and other income	-	3,967	-	7,000	-	-	-	197	11,164	4,821
Total Revenues	310,685	29,888	152,067	643,422	150,482	16,659	22,556	165,687	1,491,447	1,311,823
<u>Expenses:</u>										
Salaries and benefits	22,794	9,017	2,234	6,028	5,935	5,939	2,633	7,769	62,349	60,219
Program expenditures	299,284	600	140,413	641,183	106,076	8,497	18,794	156,349	1,371,196	1,108,395
Investment related expenses	-	163	-	-	-	-	-	-	163	348
Program operating costs	689	2,716	55	75	4	375	149	451	4,514	3,598
General & administrative expenses	6,073	2,391	595	1,617	1,580	1,577	714	2,068	16,615	14,245
Depreciation	1,133	180	281	166	119	118	58	479	2,534	3,303
NYS Assessments	3,071	140	1,336	6,040	1,058	153	208	1,588	13,594	13,594
Bond interest and fees	-	-	-	-	-	-	-	3,624	3,624	3,890
Total Expenses	333,044	15,207	144,914	655,109	114,772	16,659	22,556	172,328	1,474,589	1,207,592
Net sources / (uses) of net position other than transfers	(22,359)	14,681	7,153	(11,687)	35,710	(1)	-	(6,641)	16,858	104,231
Inter-program transfers	33,789	-	-	-	(45,789)	-	-	12,000	-	-
Net Investment in Capital Assets	(677)	-	(236)	(44)	-	-	(4)	191	(770)	(743)
<u>Net Position End of Year:</u>										
Restricted for specific programs	56,184	-	24,388	(36,853)	123,333	3,101	(200)	223,416	393,370	389,056
NY Green Bank Capitalization	-	1,017,010	-	-	-	-	-	-	1,017,010	776,208
Net Investment in Capital Assets	608	-	269	52	-	-	200	11,868	12,997	13,767
Unrestricted	-	-	-	-	-	-	-	4,324	4,324	4,331
Net position end of year	\$ 56,792	1,017,010	24,657	(36,801)	123,333	3,101	-	239,608	1,427,701	1,183,362

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
State appropriations					
West Valley	\$ 15,043	18,200	2,300	20,500	Reflects an increase in anticipated program expenditures for NYSERDA's share of federal and state spending at West Valley.
Energy & Environmental Analysis - Low-Level Radioactive Waste RGGI	150	150	(8)	143	Reflects a 5% reduction in accordance with Division of the Budget guidelines.
Other Programs - Energy/Environmental projects	1,602	6,169	(5,028)	1,141	Reflects a reduction in anticipated expenditures under the RGGI Cleaner Greener Community program (repayment of the FY 13-14 transfer of \$25 million to the State General Fund) and removal of reimbursement funding for the 76 West initiative which was included in FY 20-21 budget.
Other Programs - Energy/Environmental projects	12,637	9,364	(9,088)	276	Reflects a decrease in anticipated expenditures under a UDC Capital Budget appropriation and reduction in reimbursement funding for a Brookhaven National Lab Energy Storage project which was completed during FY 20-21.
Total state appropriations	29,432	33,883	(11,823)	22,060	
Third party reimbursement	36,896	23,494	7,518	31,012	Reflects an increase in funding to be received under the Federal Government Volkswagen settlement, offset in part by a reduction in reimbursement funding based on anticipated expenditures under the Indian Point Energy Center Reliability Contingency and National Fuel Gas gas efficiency programs.
Utility surcharge assessments					
Market Development/ Innovation & Research NY-Sun	226,809	195,798	99,780	295,578	Increase reflects revenues based on anticipated expenditures under the BAYG approach.
Energy Storage	126,197	80,933	71,074	152,007	Increase reflects revenues based on anticipated expenditures under the "Bill-As-You-Go" (BAYG) approach.
SBC/RPS/(EEPS FY19-20 actuals only)	-	11,888	47,241	59,129	Increase reflects revenues based on anticipated expenditures under the BAYG approach for this program which was authorized by the Public Service Commission in January 2019.
18-a funding	175,526	63,892	1,466	65,358	Decrease reflects revenues based on anticipated expenditures under the BAYG approach, which reflects winding down and closure of legacy SBC, EEPS, and RPS programs.
NY Green Bank	19,700	22,700	-	22,700	(No change)
Total utility surcharge assessments	20,678	155,534	(155,534)	-	NY Green Bank anticipated to fully draw upon ratepayer-funded capitalization during FY20-21.
Renewable energy credit proceeds	568,910	530,745	64,026	594,771	
Zero emission credit assessments	5,613	9,096	36,729	45,825	Reflects an anticipated increase in the number of renewable energy credits to be sold to load serve entities pursuant to newly revised compliance requirements under the existing Clean Energy Standard Tier One and new Tier Two State-mandated compliance programs.
Allowance auction proceeds	528,346	541,037	49,436	590,473	Increase is based on the maximum "zero-emission" credit price established pursuant to the Clean Energy Standard Order of the Public Service Commission (PSC) but the actual subsidy price will be determined prior to April 1, 2021.
Project repayments	112,024	128,448	20,739	149,187	Reflects an increase in both the anticipated allowance price and number of allowances to be auctioned consistent with the FY 21-22 RGGI Operating Plan. The allowance price is based on the September 2020 auction results.
Federal grants	68	385	(185)	200	Reflects a decrease based on anticipated recoupment payments.
Rentals from leases	2,910	6,901	3,643	10,544	Principally reflects a net increase in anticipated reimbursable expenditures under the U.S. Department of Energy (DOE) 'Offshore Wind Consortium' and 'State Energy Program' grants and an increase in a NYS Department of Transportation Congestion Mitigation Air Quality grant, offset in part by decreases in certain DOE energy efficiency special project grants.
Interest income	1,026	986	10	996	(Minor change)
Loan interest - NY Green Bank	18,338	684	318	1,002	Increase is principally due to expected higher investment balances. Yields are based on a one-year U.S. Treasury bond index rate (FY 20-21's assumed rate was .10% and FY 21-22's assumed rate is .12%).
Loan interest - GJGNY	18,612	22,586	2,992	25,578	Reflects an increase in anticipated loan activity.
QECCB interest subsidy	7,739	8,402	(73)	8,329	Reflects a slight decrease increase in anticipated loan activity.
Fees and other income	402	355	(49)	306	Principally due to a lower outstanding principal balance on the 2013 Energy Efficiency Financing Revenue Bonds generating less interest expense qualifying for the subsidy.
Total Revenues:	6,125	4,821	6,343	11,164	Increase principally reflects non-refundable Clean Energy Standard bid fees not budgeted in FY 20-21, offset in part by a decrease in estimated NY Green Bank closing and undrawn fees.
	1,336,441	1,311,823	179,624	1,491,447	

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
<u>Expenses:</u>					
Salaries	39,683	42,768	(1,200)	41,568	Reflects a net decrease in assumed filled positions, partially offset by an assumed 2% cost-of-living adjustment and performance-based salary increases/awards presuming similar awards are approved for NYS employees.
Benefits	17,125	17,451	3,330	20,781	Principally reflects an anticipated increase in pension costs based on most recent FY20-21 actuarial pension expense from NYS Retirement System, as well as, increases in compensated absences and health insurance estimates based on current spending levels.
Total salaries and benefits	56,808	60,219	2,130	62,349	
Program expenditures					
NY-Sun	111,779	96,602	43,811	140,413	Reflects an increase in anticipated expenditures based on project completion dates and timing of incentive payments.
Market Development/ Innovation & Research	212,169	230,427	68,857	299,284	Reflects an overall increase in anticipated program activity resulting from the implementation of an increased number of approved initiatives.
Clean Energy Standard - REC	8,175	8,817	37,008	45,825	Reflects an increase in the projected purchase of renewable energy credits of on-line facilities under the Clean Energy Standard Tier One and Tier Two State-mandated compliance program.
Clean Energy Standard - ZEC	537,742	541,188	49,285	590,473	Represents an increase in payments to zero-emission generation facilities based on the maximum credit price established pursuant to the Clean Energy Standard Order of the Public Service Commission but the actual subsidy price will be determined prior to April 1, 2021.
Other Programs (individually < 5% of total)	202,353	116,084	48,697	164,781	Represents an overall increase in anticipated expenditures primarily for the Energy Storage Program which was authorized by the Public Service Commission in January 2019, offset in part by a decrease in RPS program expenditures from cancelled Main Tier contracts and for reduction in incentive payments for Customer-sited Tier technology projects based on program wind down.
Regional Greenhouse Gas Initiative	69,865	93,618	12,458	106,076	Reflects an increase in anticipated expenditures based on amounts included in the FY 21-22 RGGI Operating Plan.
West Valley	14,126	16,589	2,205	18,794	Reflects an increase in anticipated program expenditures for NYSERDA's share of federal and state spending at West Valley.
NY Green Bank	214	120	480	600	Reflects an increase in anticipated Evaluation expenditures.
Energy & Environmental Analysis	4,856	4,950	-	4,950	(No change)
Total program expenditures	1,161,279	1,108,395	262,801	1,371,196	
Investment related expenses - NY Green Bank	399	348	(185)	163	Represents a decrease in estimated non-reimbursed program related costs to support investment portfolio transactions.
Program operating costs	2,854	3,598	916	4,514	Primarily reflects an increase in temporary service costs for NY Green Bank.
General & administrative expenses	12,818	14,245	2,370	16,615	Reflects an increase in temporary service costs for several administrative departments, an increase in IT software needs, IT professional service costs, and web based storage upgrades, offset in part by a decrease in telecommunications costs.
Depreciation	2,976	3,303	(769)	2,534	Reflects a decrease in projected depreciation on existing capital assets which is offset in part from planned additions in FY 21-22.
NYS Assessments	13,594	13,594	-	13,594	(No change)
Bond interest and fees	4,234	3,890	(266)	3,624	Decrease reflects scheduled interest expense payments based on aggregate outstanding principal balances including the addition of the 2020 Residential Solar and Energy Efficiency Financing Green Revenue Bonds.
Total Expenses:	1,254,962	1,207,592	266,997	1,474,589	

NYSERDA
FY 2021-22 Budget
Reconciliation of Budget Changes
(Amounts in thousands)

	Actual FY 2019-20	Budget FY 2020-21	Change	Budget FY 2021-22	Explanation for change
Net (expense) revenue and change in net position	81,479	104,231	(87,373)	16,858	
Net position beginning of year	997,652	1,079,131	331,712	1,410,843	Reflects adjustments for known timing differences (in FY 20-21).
<u>Net position end of year:</u>					
Restricted for specific programs	452,462	389,056	4,314	393,370	Primarily from an increase in the anticipated effect of BAYG pursuant to the CEF Order, offset in part by a decrease in the anticipated timing of the Clean Energy Standard revenues and expenditures.
NY Green Bank Capitalization	606,394	776,208	240,802	1,017,010	Reflects the net effect of all undrawn capital, deployed capital, matured/recycled capital, and a cumulative result of revenues exceeding expenditures.
Net Investment in Capital Assets	14,234	13,767	(770)	12,997	Reflects anticipated asset purchases less depreciation.
Unrestricted	6,041	4,331	(7)	4,324	(Minor change)
Total net position end of year	<u>\$ 1,079,131</u>	<u>1,183,362</u>	<u>244,339</u>	<u>1,427,701</u>	

Certain amounts for FY 2019-20 and FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Salaries and benefits
 (Amounts in thousands)

	Actual	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Salaries **	39,683	42,768	(1,201)	41,567
Fringe Benefits:				
Pension	4,444	4,822	1,917	6,739
Compensated absence leave accruals	1,229	473	1,108	1,581
Health insurance	4,394	4,579	237	4,816
Postemployment health insurance (GASB 45/75)	2,608	2,709	113	2,822
NYS Paid Family Leave	38	68	62	130
Workers compensation	81	85	24	109
Unemployment	3	34	6	40
Short-Term Disability	0	0	5	5
Long-term disability insurance	87	90	3	93
Dependent Care plan	14	20	(6)	14
Dental plan	278	337	(10)	327
Voluntary Defined Contribution Plan	1,002	1,072	(15)	1,057
Vision care plan	24	34	(17)	17
Tuition reimbursement	38	35	(28)	7
Social Security/Medicare taxes	2,886	3,093	(68)	3,025
sub-total benefits	<u>17,125</u>	<u>17,451</u>	<u>3,331</u>	<u>20,782</u>
Percentage of Salaries	43.2%	40.8%		50.0%
Total Salaries and Benefits	<u><u>56,808</u></u>	<u><u>60,219</u></u>	<u><u>2,130</u></u>	<u><u>62,349</u></u>
Number of full-time equivalent employees (FTEs)	345.6	362.2	(8.1)	354.1

** Salaries include a 2% cost-of-living-adjustment which was originally scheduled to occur effective April 1, 2020, but has not been authorized by the State. The increase, if approved by NYS, will be in accordance with increases granted for M/C employees. No retroactive salary costs for FY 20-21 have been budgeted as it is uncertain whether a retroactive component will occur but would be paid out if authorized by NYS. Salaries also include performance-based salary increases and payments generally equivalent to salary increases and total salary costs anticipated to be provided for NYS employees.

NYSERDA FY21-22 Budget
 Detail schedule: Program Expenditures
 (Amounts in thousands)

<u>Function/Program</u>	<u>Working Budget *</u>	<u>Budget FY 2020-21</u>	<u>Budget FY 2021-22</u>	<u>Financial Plan FY 2022-23</u>	<u>Financial Plan FY 2023-24</u>	<u>Financial Plan FY 2024-25</u>	<u>Future</u>
Market Development/ Innovation & Research	\$ 2,610,352	230,427	299,284	350,798	351,233	308,582	1,070,029
NY Green Bank	1,915	120	600	535	660	-	-
NY-Sun	1,282,660	96,602	140,413	357,123	358,192	167,670	162,660
Clean Energy Standard - Offshore Wind	5,933,208	1,325	4,885	4,885	34,800	177,600	5,709,712
Clean Energy Standard - REC	4,756,374	14,413	23,603	90,833	134,464	169,029	4,324,032
Clean Energy Standard - REC Tier 2	200,770	-	22,222	40,000	48,889	31,111	58,548
Clean Energy Standard - ZEC	2,323,161	541,188	590,473	590,473	186,650	186,650	227,727
RGGI	456,255	93,618	106,076	106,875	91,104	10,245	48,337
Energy & Environmental Analysis	39,497	7,950	8,497	7,950	7,950	7,150	-
West Valley	91,244	16,589	18,794	18,769	18,618	18,474	-
Other Programs	740,217	106,162	156,350	170,383	103,363	54,232	149,727
Total	\$ 18,435,653	1,108,395	1,371,196	1,738,624	1,335,923	1,130,743	11,750,771

* Working Budget represents approved sponsor funding or amounts anticipated to be approved for future year activity

Certain amounts for FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Program Operating Costs
 (Amounts in thousands)

	Actuals	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Temporary Staffing, Outside Technical Reviewer	152	208	947	1,155
Office Supplies, Equipment Rental, and Other	292	292	131	423
Computer Services and Software	313	336	82	418
Rent, Maintenance & Repairs, Utilities, Insurance	403	415	8	423
Training, Recruitment & Relocation	0	61	(3)	59
Travel and Outreach Costs	440	595	(39)	555
Professional Services:				
STEP & Other Consulting	50	35	17	52
NY Green Bank	1,204	1,656	(227)	1,429
Total Professional Services	<u>1,254</u>	<u>1,691</u>	<u>(210)</u>	<u>1,481</u>
Total Program Operating Costs	<u><u>2,854</u></u>	<u><u>3,598</u></u>	<u><u>916</u></u>	<u><u>4,514</u></u>

NYSERDA FY 2021-22 Budget

Detail schedule: General & Administrative Expenses

(Amounts in thousands)

	Actuals	Budget		Budget
	<u>FY 2019-20</u>	<u>FY 2020-21</u>	<u>Change</u>	<u>FY 2021-22</u>
Temporary Staffing, Outside Technical Reviewer	3,755	3,059	971	4,030
Computer Services and Software	2,862	3,424	915	4,339
Rent, Maintenance & Repairs, Utilities, Insurance	3,196	3,398	300	3,698
Professional Services:				
Website support services	420	380	160	540
Information Technology	1,056	2,069	27	2,096
Fiscal Agent, audit and third-party payroll and Human Resource services	513	542	17	559
Other Consulting	176	66	40	106
Internal Audit support services	1	50	-	50
Marketing	133	280	-	280
Communication and consumer support services	132	150	-	150
Total Professional Services	<u>2,431</u>	<u>3,537</u>	<u>244</u>	<u>3,781</u>
Training, Recruitment & Relocation	109	305	(3)	302
Travel and Outreach Costs	263	247	(12)	236
Office Supplies, Equipment Rental, and Other	202	275	(46)	229
Total General & Administrative Expense	<u><u>12,818</u></u>	<u><u>14,245</u></u>	<u><u>2,369</u></u>	<u><u>16,615</u></u>

Certain amounts for FY 2019-20 and FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Capital Budget
 (Amounts in thousands)

	<u>Actual</u> <u>FY 2019-20</u>	<u>Budget</u> <u>FY 2020-21</u>	<u>Change</u>	<u>Budget</u> <u>FY 2021-22</u>
Building improvements	-	260	701	961
Information technology upgrades	293	345	450	795
Furniture, fixtures and equipment	172	-	7	7
Leasehold improvements	20	-	-	-
STEP infrastructure	13	30	(30)	-
Vehicles	-	40	(40)	-
Clean Energy Fund system development costs	795	1,600	(1,600)	-
Total Capital Asset Additions	<u>1,293</u>	<u>2,275</u>	<u>(512)</u>	<u>1,763</u>

Certain amounts for FY 2020-21 have been reclassified to conform with the FY 2021-22 Budget presentation.

NYSERDA FY 2021-22 Budget
 Detail schedule: Debt Schedule
 (Amounts in thousands)

Purpose: Refinancing of loans issued through the Green Jobs-Green New York financing program

	<u>Principal Issued</u>	<u>Anticipated Total Debt Service</u>	<u>Pledged Revenues</u>	<u>Debt service % of Pledged Revenues</u>	<u>FY 21-22 Debt Service</u>	<u>FY 21-22 Outstanding Principal</u>	<u>FY 22-23 Debt Service</u>	<u>FY 22-23 Outstanding Principal</u>	<u>FY 23-24 Debt Service</u>	<u>FY 23-24 Outstanding Principal</u>
Residential Energy Efficiency Financing Revenue Bonds										
Series 2013A (NYS EFC Guarantee)	24,300	29,651	37,436	79.2%	2,133	8,880	1,892	7,290	1,697	5,845
Series 2015A	46,358	53,824	67,991	79.2%	3,738	27,310	3,660	24,210	3,657	21,050
Series 2016A	23,180	27,539	34,473	79.9%	2,017	15,695	1,859	14,190	1,785	12,730
Residential Solar Loan Revenue Bonds, Series 2015A	48,536	75,406	86,927	86.7%	3,843	17,081	3,813	14,031	3,292	11,353
Residential Solar Loan Revenue Bonds, Series 2018A	18,500	21,908	30,732	71.3%	2,018	12,175	1,967	10,675	1,720	9,375
Residential Solar and Energy Efficiency Financing Green Revenue Bonds, Series 2019A	15,510	18,339	21,257	86.3%	1,844	11,700	1,736	10,380	1,630	9,125
Residential Solar and Energy Efficiency Financing Green Revenue Bonds, Series 2020A	<u>16,690</u>	<u>19,859</u>	<u>22,611</u>	87.8%	<u>2,287</u>	<u>14,785</u>	<u>2,415</u>	<u>12,720</u>	<u>2,137</u>	<u>10,900</u>
Total	193,074	246,526	301,427	81.8%	17,880	107,626	17,342	93,496	15,918	80,378

Proposed New Debt *

* No new debt issues are included in the Budget and Financial Plan as additional debt issues will require approval by the NYSERDA Board and the Public Authorities Control Board.

NYSERDA
 Budget FY 2021-22
 Financial Plan
 (Amounts in thousands)

	FY 2021-22 Budget	FY 2022-23 Projection	FY 2023-24 Projection	FY 2024-25 Projection
REVENUES:				
State appropriations	\$ 22,060	22,763	23,496	22,518
Third party reimbursement	31,012	29,056	29,056	29,056
Utility surcharge assessments	594,771	934,287	843,731	538,780
Renewable energy credit proceeds	45,825	91,236	188,051	354,283
Zero emission credit payments	590,473	590,473	186,650	186,650
Allowance auction proceeds	149,187	143,175	132,632	132,632
Federal grants	10,544	12,123	8,015	6,524
Other income	47,575	47,030	52,937	58,964
TOTAL REVENUES	1,491,447	1,870,142	1,464,568	1,329,406
EXPENSES:				
Salaries and benefits	62,349	64,219	66,146	68,130
Program expenditures	1,371,196	1,738,624	1,335,923	1,130,743
Investment related expenses	163	370	377	385
Program operating costs	4,514	4,671	4,791	4,924
General & administrative expenses	16,615	16,601	17,098	17,612
Depreciation	2,534	2,097	1,712	1,386
NYS assessments	13,594	13,594	13,594	13,594
Bond interest and fees	3,624	3,213	2,800	2,419
TOTAL EXPENSES	1,474,589	1,843,390	1,442,441	1,239,195
Net (expense) revenue and change in net position	16,858	26,753	22,126	90,212
Net position beginning of year	1,410,843	1,427,701	1,454,454	1,476,580
Total net position end of year	\$ 1,427,701	1,454,454	1,476,580	1,566,792

NYSERDA
 FY 2021-22 Cash-Based Budget
 (Amounts in thousands)

	Functions/Programs								FY 21-22 Cash Budget Total Total
	Market Development / Innovation & Research	NY Green Bank	NY-Sun	Clean Energy Standard	RGGI	Energy & Environmental Analysis	West Valley	Other	
RECEIPTS:									
State appropriations	\$ -	-	-	-	1,141	143	20,500	276	22,060
Third party reimbursement	15,000	-	-	-	-	-	2,056	13,956	31,012
Utility surcharge assessments	295,578	-	152,007	-	-	13,666	-	133,521	594,771
Renewable energy credit proceeds	-	-	-	45,825	-	-	-	-	45,825
Zero emission credit payments	-	-	-	590,473	-	-	-	-	590,473
Allowance auction proceeds	-	-	-	-	149,187	-	-	-	149,187
Project repayments	-	-	-	-	-	-	-	200	200
Federal grants	-	-	-	-	-	2,850	-	7,694	10,544
Rentals from leases	-	-	-	-	-	-	-	996	996
Interest income	108	343	61	124	154	-	-	212	1,002
Loan interest	-	25,578	-	-	-	-	-	8,329	33,907
Loan principal repayments	-	187,553	-	-	-	-	-	18,653	206,206
QECB interest subsidy	-	-	-	-	-	-	-	306	306
Fees and other income	-	3,967	-	7,000	-	-	-	197	11,164
TOTAL REVENUES	310,685	217,441	152,067	643,422	150,482	16,659	22,556	184,340	1,697,653
DISBURSEMENTS:									
Salaries and benefits	22,794	9,017	2,234	6,028	5,935	5,939	2,633	7,769	62,349
Program expenditures	299,284	600	140,413	641,183	106,076	8,497	18,778	156,349	1,371,180
Investment related expenses	-	163	-	-	-	-	-	-	163
Other Operating costs	689	2,716	55	75	4	375	149	451	4,514
General & administrative expenses	6,073	2,391	595	1,617	1,580	1,577	714	2,068	16,615
Capital asset additions	645	255	63	171	168	168	74	219	1,763
Deployed Capital	-	234,163	-	-	-	-	-	-	234,163
Bond interest and fees	-	-	-	-	-	-	-	3,624	3,624
Principal bond payment	-	-	-	-	-	-	-	14,256	14,256
Loan purchases	-	-	-	-	-	-	-	32,318	32,318
NYS Assessments	3,071	140	1,336	6,040	1,058	153	208	1,588	13,594
TOTAL EXPENSES	332,556	249,445	144,696	655,114	114,821	16,709	22,556	218,641	1,754,538
Net (expense) revenue and change in cash position	(21,871)	(32,004)	7,371	(11,692)	35,661	(51)	-	(34,301)	(56,885)
Cash and investments, beginning of year	58,729	298,038	29,950	114,213	119,142	3,493	-	101,472	725,037
Inter-program transfers	33,789	-	-	-	(45,789)	-	-	12,000	-
Cash and investments, end of year	\$ 70,648	266,034	37,321	102,521	109,014	3,442	-	79,172	668,152

Resolution No. _____

RESOLVED, that the proposed fiscal year 2021-22 Budget and Financial Plan submitted to the Members for consideration at this meeting, with such non-material, editorial changes and supplementary schedules as the Acting President and Chief Executive Officer, in her discretion, may deem necessary or appropriate, be and it hereby approved by the Board for submission to the persons designated in Sections 1867(4) and 2801 of the Public Authorities Law.

Toward a Clean Energy Future:

A Strategic Outlook 2021–2024



NEW YORK
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NYSERDA

Message from Acting President and CEO

Looking back on 2020, it was a year that scarce few of us could have imagined, never mind predicted. In many ways, the world shifted beneath our feet, with a global pandemic disrupting nearly every aspect of our daily lives and forcing us to reconsider many of the things that we had collectively taken for granted. During this time when Americans were focused on sheltering safely from COVID-19, historic demonstrations over racial injustice also roiled the country and our collective conscience. What's more, crises that had heretofore been viewed as long-term issues came into sharp, immediate relief, including the climate crisis—which reared its head with powerful hurricanes, forest fires, floods, and other extreme weather. In climate and beyond, many observers remarked that 2020 should not be viewed as the most extreme year of our lifetimes, but rather the least extreme year for the rest of the 21st Century—a sobering notion.



The convergence of crises in 2020 means the call to act on climate change and accelerate the energy transition has reached new levels of urgency and appreciation.

If nothing else, however, the convergence of crises in 2020 means the call to act on climate change and accelerate the energy transition has reached new levels of urgency and appreciation, demanding a renewed attention on planning and action. We have all now lived through, and continue to experience first-hand, what it means for society to adapt to major disruptive events, and certainly those of us in New York can attest to the difference that capable leadership and informed planning from government can have on our response and its efficacy.

In addition, 2020's converging crises should leave us all with deeper appreciation for the interconnected nature of our systems, institutions, and policy legacies that continue to perpetuate inequitable outcomes for disadvantaged communities and marginalized populations in New York State and beyond.

As Governor Andrew M. Cuomo noted in the early heights of the COVID crisis, health disparities in minority demographic groups mirror the locations of our most polluting infrastructure, which have contributed to chronically higher rates of respiratory illnesses such as asthma—and in many of the same locations that will disproportionately face risks from a changing climate in the years ahead. **We have to learn this lesson and embed its implications into all of our efforts in the future.**

Against this backdrop, I'm proud to introduce a Strategic Outlook for 2021–2024 that places people at the heart of all our efforts across NYSERDA.

In implementing Governor Cuomo's nation leading climate agenda and the Climate Leadership and Community Protection Act (Climate Act), we must do everything we can to drive climate progress that works for the people—all New Yorkers. That means putting a new lens over NYSERDA's existing mission and vision statements and core outcomes to ensure that our objectives across renewable energy, energy efficiency, a clean energy economy, a resilient and distributed energy system, and greenhouse gas reductions are properly in focus with respect to a people-centric orientation.

And, it means undertaking deep-dive examinations of new priorities where tremendous opportunities exist to deliver benefits to all New Yorkers, especially those in historically underserved communities. Specifically, our deep-dive focus areas for the coming three years will span several notable areas of inquiry and action, all of which revolve around improving lives for New York residents:

- fostering healthy communities;
- supporting clean energy jobs and New York's economic recovery;
- building an inclusive clean energy economy; and
- accelerating the transition from natural gas to a low-carbon future.

All these areas build on work already underway at NYSERDA, representing the priorities for the entire organization.

Thankfully, New York will remain at the vanguard of climate progress, even with the transition to a new presidential administration in Washington, D.C. After New York embraced sweeping change in 2019 with the signing of the Climate Act, additional legislative action in 2020 has positioned New York to accelerate the development of responsibly sited renewable resources, with accompanying measures for robust grid planning and investment and new state roles for boosting renewable energy development, especially on underutilized sites. Regulatory action in 2020 followed similar suit, including the adoption and approval of the expanded and nation-leading goal to achieve **70% renewable energy by 2030 through the Clean Energy Standard**, along with historic new targets for energy efficiency and building and vehicle electrification.

**New York will remain
at the vanguard of
climate progress.**

NYSERDA remains at the heart of these and other efforts to double-down on progress toward the State's unprecedented clean energy and carbon reduction mandates, and we are laser focused on near-term action given the imperative of building back better from the coronavirus pandemic.

Just recently in early 2021, Governor Cuomo announced the largest combined renewable energy awards ever by a state in the U.S. These unprecedented procurements resulted in two offshore wind projects, Empire Wind 2 and Beacon Wind, and 24 large-scale land-based clean energy projects awarded by NYSERDA, totaling more than 4,700 megawatts—enough new renewable capacity to power almost 2 million New York homes for at least 20 years. In addition to delivering clean, renewable energy, these projects combined are expected to spur nearly \$14 billion in direct investments and create over 8,600 good-paying short- and long-term jobs which will help stimulate the State's economic recovery. The offshore wind projects will furthermore leverage almost \$3 of private funding for every \$1 of public funding for a combined \$644 million investment in resilient port facilities in the Capital Region and Brooklyn. Once completed, the offshore wind projects and land based projects will, when combined with the dozens of large-scale renewable energy projects under development, more than double the State's existing renewable generation and bring New York to over 50% electricity from renewable sources to support Governor Cuomo's 70% by 2030 renewable energy goal.

The next three years will be looked back on as momentous for New York's clean energy transition and climate leadership. Major planning and scoping efforts will play out before the Climate Action Council, billions of dollars of project investments will be committed, and we will begin in earnest an unprecedented scale-up and construction of clean energy infrastructure to meet the call of the climate crisis and develop a cleaner, more affordable, and more resilient energy system. New technological innovations will bring us closer to the realization of energy breakthroughs needed to address the most difficult to decarbonize sectors and use-cases, promising bright new climate-tech solutions that New York can export to the world.

I'm immensely proud to work at NYSERDA, serving the people of New York State. Thanks to the dedicated work and excellence of our teams across the Authority, the opportunities for us to increase our impact will continue to grow. I hope all our stakeholders find this Strategic Outlook valuable in highlighting how we will continue to lead and build on our knowledge and success to date and drive toward a better, cleaner, more resilient future, where New York's people can flourish.



**Doreen M. Harris,
Acting President
and CEO, NYSERDA**

This forward-looking document reflects State policy and NYSERDA's plans as of January 2021. Because New York's energy policy objectives continue to develop in response to the evidence that aggressive action is needed to combat climate change—and greater ambition is possible—updates to particular targets will be noted on the Strategic Outlook webpage: nyserdera.ny.gov/Strategic-Outlook.

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NYSERDA and Its Context

NYSERDA'S EVOLVING CHARGE

In 2020, NYSERDA undertook an exercise to revisit and refresh its mission and vision statements to better reflect many of the new imperatives that are increasingly driving and shaping the Authority's work. Upon closer look, it was clear that the important themes of climate change, equity and inclusivity, jobs and economic opportunity, public health, and resilient communities must be central to its mission and vision going forward.

NYSERDA IS PROUD TO PRESENT A NEW MISSION AND VISION STATEMENT TO GUIDE THE ORGANIZATION'S CURRENT AND FUTURE INITIATIVES.

Our Vision:

New York is a global climate leader building a healthier future with thriving communities; homes and businesses powered by clean energy; and economic opportunities accessible to all New Yorkers.

Our Mission:

Advance clean energy innovation and investments to combat climate change, improving the health, resiliency, and prosperity of New Yorkers and delivering benefits equitably to all.

Our Promise:

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



STATE POLICIES AND COMMITMENTS THAT STEER NYSERDA'S WORK

Under the Climate Leadership and Community Protection Act (Climate Act), Governor Andrew M. Cuomo is driving the most aggressive climate and clean energy agenda in the nation, setting New York on a path for a just transition to carbon neutrality, spurring the growth of the green economy while prioritizing the needs of disadvantaged communities across the State. New York State—a founding member of organizations like the Regional Greenhouse Gas Initiative (RGGI) and the U.S. Climate Alliance—aims to meet the energy-related challenges posed by climate change head on, while creating economic opportunities.

As co-chair of the State's Climate Action Council, NYSERDA plays a critical role in charting the direction of New York's energy policies.

CLEAN ENERGY ECONOMY

nearly 159,000 clean energy jobs

now

RENEWABLE ENERGY

6,000 MW of distributed solar

by 2025

RESILIENT and DISTRIBUTED GRID

1,500 MW of energy storage

ENERGY EFFICIENCY

185 TBtu end-use savings in buildings and industrial facilities

RENEWABLE ENERGY/ CLEAN ENERGY STANDARD

70% electricity from renewable energy

by 2030

GHG REDUCTION

40% reduction in greenhouse gas emissions from 1990 levels

3,000 MW of energy storage

30,000 employed in storage sector

NYSERDA'S ROLE

As New York State's clean energy and climate innovation agency, NYSERDA plays a key role in implementing the State's nation-leading clean energy and climate policies, programs and actions, delivering a cleaner, healthier, and more prosperous future for all New Yorkers.

NYSERDA is on the front lines of a global energy transition, bringing energy expertise and public service to the challenges of fighting climate change and accelerating the pace to a green energy future.

NYSERDA works to foster the transformation and expansion of markets, pushing them to accurately value clean energy, energy efficiency, and resilience—while encouraging competition and innovation that delivers value to consumers. In so doing, NYSERDA uses a data-driven approach both to guide program design and to provide for high levels of accountability and transparency. NYSERDA focuses on:

- De-risking energy transitions and deployment from technological and business model innovation, to demonstration projects, to broad commercialization.
- Reducing hard and soft costs of clean energy development by driving demand and focusing the efforts of key stakeholders, as well as by supporting and focusing technological and process innovation.
- Leveraging program investments to support job creation in the clean energy economy and expanded access to economic opportunities for disadvantaged communities.
- Designing and administering novel programs and pilots to meet the needs of emerging policy priorities and deep decarbonization pathways.
- Providing targeted financial support where up-front costs present a persistent barrier, such as for low- to moderate-income (LMI) consumers and disadvantaged communities.
- Enabling communities to take local action on clean energy, climate, and resilience.
- Instilling confidence in markets and consumers through information, credible analysis, and education.
- Increasing market participants' access to capital by creating attractive precedents and standardizing approaches that capital providers can readily replicate and scale up.
- Investigating and designing ambitious energy and climate strategies for the long-term.

RENEWABLE ENERGY

9,000 MW of offshore wind



by 2035

CLEAN ELECTRICITY

100% zero-emission electricity



by 2040

GHG REDUCTION

85% reduction in greenhouse gas emissions from 1990 levels



by 2050

Amidst a turbulent world and constantly changing external conditions, NYSERDA aims to be a beacon of certainty and reliability for stakeholders and partners in New York State, exhibiting the steadfast and focused attention that will be needed to combat the climate crisis in the decades ahead. **Despite the challenges posed by a global pandemic and economic uncertainty, NYSERDA is leveraging its programs within the flourishing clean energy market to assist in building back better and greener toward the State’s ambitious long-term climate mandates.**

Accelerated Renewable Energy Growth and Community Benefit Act

Passed in April 2020, the Act ushered in a new era for renewable energy development, permitting, and approval—one that aligns the State’s regulatory regime with the urgency of expediting responsibly sited solar and wind. It established a new Office of Renewable Energy Siting (ORES), provided NYSERDA with new Build-Ready authority, and initiated new modeling and procedures for grid investments to integrate renewables.

POLICY FRAMEWORK

The landscape and policy framework surrounding NYSERDA’s work has changed rapidly over the past year. Key drivers of change include:

- Passage of New York’s Climate Leadership and Community Protection Act (Climate Act). Governor Cuomo signed the nation-leading Climate Act into law on July 18, 2019, dramatically raising the bar for the level of ambition that New York State needs to achieve and for other jurisdictions to follow.
- Increased focus on key priority areas stemming from the Climate Act:
 - ▶ Increasing access to (and benefits from) clean energy for disadvantaged communities and low-income consumers
 - ▶ Creating quality jobs in the green economy, ensuring a just transition, and protecting New York workers as we transition to a carbon-neutral economy
 - ▶ Identifying sectors of the economy that require deeper decarbonization (e.g., transportation, buildings)
- Bold action driven at the local level, which will require unprecedented coordination between the State and local government, particularly the Climate Mobilization Act in New York City.
- Passage of the Accelerated Renewable Energy Growth and Community Benefit Act and approval of the 70% renewable by 2030 Clean Energy Standard (CES). Identifying clean electricity as a key achievement in economy-wide decarbonization, these actions cement regulatory and market certainty along with the necessary mechanisms for grid decarbonization.
- Increased attention and need to map the transition from natural gas to clean energy in light of both long-term Climate Act requirements and near-term, on-the-ground supply/demand realities.
- A renewed imperative to align NYSERDA and utility roles for market enablement and program delivery under New Efficiency: New York given that utility investment in energy efficiency and building electrification measures will increase substantially over the next few years—coupled with short timelines for achieving targets.

Advancing Internal Objectives for Diversity, Equity, and Inclusion

In 2020, NYSERDA began a comprehensive effort to examine and improve diversity, equity, and inclusion (DE&I) across the Authority. While NYSERDA has long held as a guiding principle the importance of valuing diversity and inclusion, the recent efforts reflect an elevated focus on making meaningful, concrete improvements across representation, equitable outcomes, work environment/engagement, and other dimensions—all of which will be captured in a DE&I Strategic Plan to be released soon in 2021. As highlighted throughout this year's strategic outlook, this internal work and focus is integrated with our external work in building a more inclusive clean energy economy.

- The need to build on recent policy developments (EV Make Ready Order, Medium- and Heavy-Duty Vehicles MOU) in order to make deep in-roads in reducing emissions from transportation, which is the largest contributor of emissions in the State.
- Extreme weather events, which are increasing in frequency and severity and placing rapidly increasing strain on our infrastructure and communities, necessitating the need to place resiliency at the heart of clean energy and climate solutions.

These new drivers of change build upon ongoing challenges and priorities that must continue as core areas of focus.

- The need to ensure energy affordability for all New Yorkers as the energy system undergoes transformation
- The importance of leveraging market activity and private capital to achieve aggressive policy goals
- The imperative to continue building public support for difficult systematic changes such as expanding support for large-scale projects and changing of consumer behaviors

At this critical inflection point for our climate and energy systems, NYSERDA has been and will align policy and program offerings to reflect these new and significant drivers of change, including prioritization of the key strategies and policies outlined on the next two pages.

Climate Leadership and Community Protection Act | **(Climate Act)**

Lays the groundwork for achievement of New York’s nation leading climate targets under Governor Cuomo’s leadership, while calling for an orderly and just transition to clean energy that creates jobs and continues growing a green economy. A minimum of 35%—with a goal of 40%—of benefits of clean energy investments will benefit disadvantaged communities.

Under the Climate Act, the Climate Justice Working Group is charged with developing a definition/criteria for defining Disadvantaged Communities, which will guide the delivery of benefits of investments to these communities.

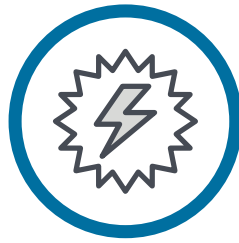
BUILDING BLOCKS OF NEW YORK'S CLEAN ENERGY AGENDA



Transportation



Buildings



Electricity



Economy Wide



Regional



Climate Act Scoping Plan

Recommendations and policies to achieve 85% GHG reduction by 2050, target carbon neutrality



Clean Energy Fund

\$5B fund for four key program portfolios:
> Market Development > NY Green Bank
> NY-Sun > Innovation & Research



Clean Energy Standard



Designed to transform the generation of electricity to renewable and zero-emission



Make Ready

Transportation emissions reductions through build-out of electric vehicles market and infrastructure



New Efficiency: New York

Comprehensive set of strategies for delivering energy efficiency savings and emissions



NYS Clean Heat

Replacing onsite fuel combustion for heating and cooling with efficient, electric heat pumps (air, ground)



Regional Greenhouse Gas Initiative (RGGI)



Cooperative effort among several states to cap and reduce CO₂ emissions from power plants



U.S. Climate Alliance

Bipartisan coalition of 24 states and Puerto Rico committed to achieving the goals of the Paris Agreement

Mission Outcomes and Strategic Focus Areas for 2021–2024

NYSERDA's primary mission outcomes are presented in the following pages. For each outcome, NYSERDA strategies over the planning horizon are presented along with a summary of NYSERDA's unique role in delivering on the critical outcome. Indicators of progress are also presented to ensure that movement in the market and progress toward these goals can be tracked.

The mission outcomes that NYSERDA seeks to advance to support the energy transformation in New York State include:



**GREENHOUSE GAS
EMISSIONS REDUCTION**



**RENEWABLE
ENERGY**



**ENERGY
EFFICIENCY**



**CLEAN ENERGY
ECONOMY**



**RESILIENT AND DISTRIBUTED
ENERGY SYSTEM**

Over the planning horizon, NYSERDA will concentrate on the following strategic focus areas to drive progress under each mission outcomes. These strategies are critical to achieving our long-term energy and greenhouse gas emission reduction goals:



**BUILDING AN
INCLUSIVE CLEAN
ENERGY ECONOMY**



**SUPPORTING CLEAN
ENERGY JOBS AND
NEW YORK STATE'S
ECONOMIC RECOVERY**



**ACCELERATING THE
TRANSITION FROM
NATURAL GAS TO A
LOW-CARBON FUTURE**



**FOSTERING HEALTHY
COMMUNITIES**

For each of these strategic focus areas, statewide priorities are presented along with key NYSERDA actions for 2021–2024. These strategic focus areas embody a common theme of centering around people—the residents and communities across New York State who utilize the energy system every day and have the potential to benefit from NYSERDA’s programs and policies.

These strategies will be crucial for achieving our ambitious and necessary climate objectives. Critical focus will be on helping historically marginalized New Yorkers access the growing green energy economy and clean energy job opportunities; supporting families to learn about and choose cleaner home appliances; and empowering neighbors, communities, and businesses to drive climate action and public health wins.

Many efforts will begin producing tangible outcomes in the near term, while others represent an acceleration in focus for a transition that will take many decades to unfold.



Greenhouse Gas Emissions Reduction

STATE POLICY GOAL
FOR GREENHOUSE GAS (GHG) EMISSIONS REDUCTION

The Climate Act sets a greenhouse gas reduction target of 40% by 2030 and 85% by 2050, each below 1990 levels.

Hitting these targets will enable the State to advance economy-wide carbon neutrality. In other words, it would mean that New York State is doing its part to reduce carbon pollution and the causes of climate change, while establishing a model for other jurisdictions to follow. The Climate Act also set in motion a process to develop an updated GHG accounting methodology, which the Department of Environmental Conservation (DEC) has commenced.

2020–2021 Climate Action Council and
Advisory Panel work

2021–2022 Draft and Final Scoping Plans
(Economy-Wide)

2023–2024 DEC Sector-Based
Emissions Regulations

2030 40% reduction in greenhouse gas
emissions, below 1990 levels

2050 85% reduction in greenhouse gas
emissions, below 1990 levels

Mission Outcome:

Greenhouse Gas Emissions Reduction



NYSERDA'S ROLE

Co-Chair the Climate Action Council to craft a roadmap of policies needed to achieve the Climate Act's goals, including co-leadership of Energy Efficiency and Housing and Power Generation Advisory Panels and Just Transition Working Groups, through analytical/modeling support for pathways analysis.

Guide and facilitate the State Energy Plan development and shape energy policies throughout New York State.

Identify and implement strategies for energy, buildings, and transportation sector emissions reductions and other GHG mitigation strategies.

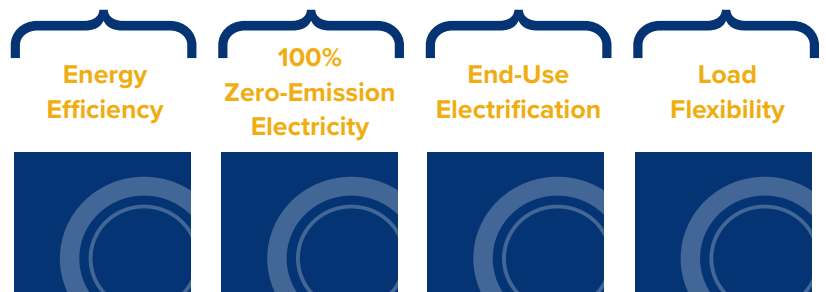
Develop and track statewide greenhouse gas inventory, supporting DEC in new emissions methodology rulemaking.

Facilitate State agencies' efforts to Lead-by-Example and drive toward carbon-neutral operations.

STRATEGIES FOR 2021–2024

- Support policy development and planning, including Climate Act Scoping Plan, Carbon Neutral Buildings Roadmap, Building Electrification Roadmap, and Clean Transportation Roadmap.
- Advance solutions to drive emissions reductions in all areas of New York's economy—through a foundation of energy efficiency, decarbonizing electricity supply, and beneficial electrification of buildings, transportation, and industrial applications.
- Spur development of innovative, next-generation solutions driving emissions reductions, from hardware, software, and materials to natural carbon solutions.
- Support communities across the State in implementing their own sustainability and clean energy goals, including localized clean heating and cooling campaigns, and widespread adoption of new stretch energy/building codes.
- Conduct analysis and program development to better spotlight and target the co-benefits of GHG reductions, especially the public health benefits that can be delivered to disadvantaged communities via reduction of co-pollutants.

Foundational pillars of deep decarbonization across all pathways:



INDICATORS OF PROGRESS

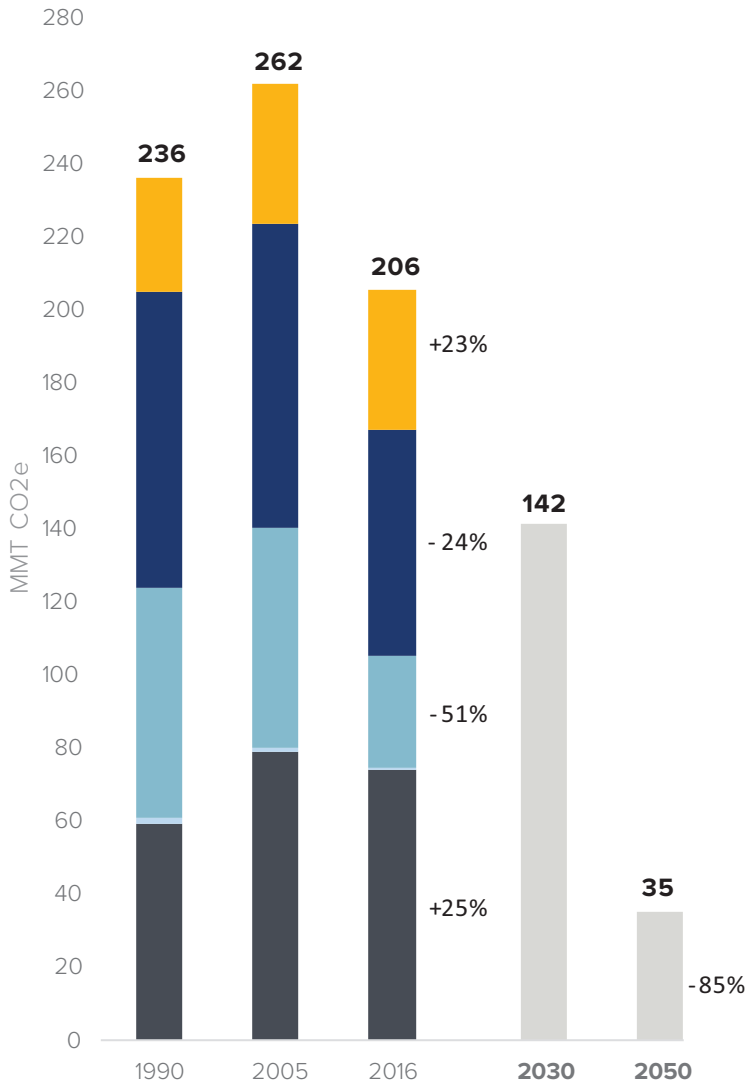
- Levels and trends in GHG emissions from sources statewide



2050 target: 85% reduction

from 1990 emissions baseline

NOTE: all emissions inventory numbers expected to be updated in 2021 following ongoing DEC rulemaking on emissions accounting methodology to align with the Climate Act.



- Non-Fuel
- Buildings: Combustion
- Buildings: Electricity
- Transportation: Electricity
- Transportation: Combustion
- Goal

HIGHLIGHTED PROGRAMS AND INITIATIVES

Clean Energy Fund accelerates the deployment of clean energy solutions while driving economic development.

Clean Energy Standard provides the framework for achieving 70% renewable electricity by 2030 via the build-out of large-scale renewable resources for New York State. Achievement supported by complementary actions initiated in 2020 legislation (Build Ready, Office of Renewable Energy Siting [ORES], Power Grid Study).

Energy Storage deployment and other **renewable energy integration measures** to get more renewables on the grid, minimize and avoid delivery impacts, bolster system flexibility, and support resiliency.

Regional Greenhouse Gas Initiative (RGGI) assigns a price to power plant emissions and directs revenue to clean energy initiatives.

EV Make Ready Order and Clean Transport prizes represent an important change in the State's commitment and investment to zero-emission vehicle adoption, with funding for utility infrastructure to support electric vehicles and NYSERDA-run prizes around environmental justice, advanced mobility, and medium- and heavy-duty vehicle innovation.

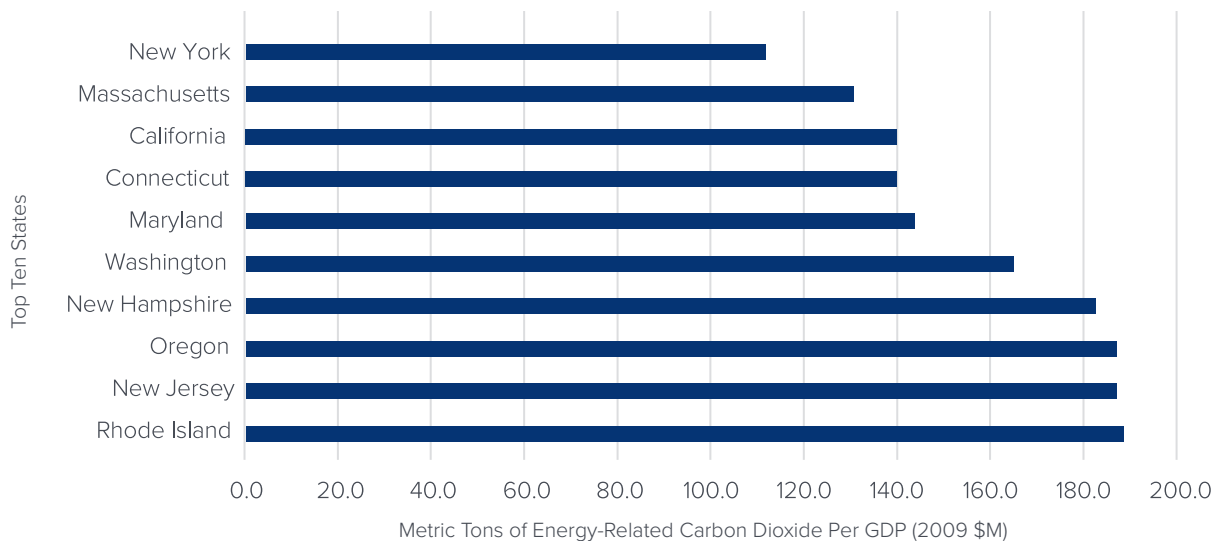
Clean Energy Communities recognizes and rewards communities for implementing clean energy actions that save taxpayer dollars, create jobs, and improve the environment.



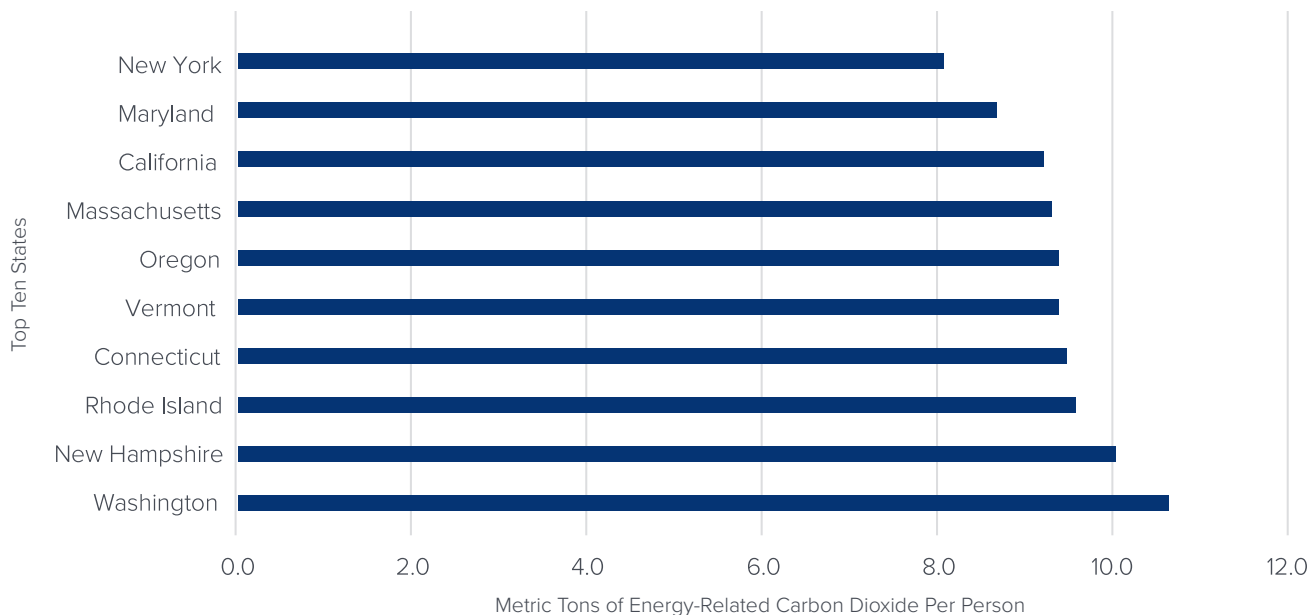
As of 2017 (most recent U.S. E.I.A. data), New York is the most carbon-efficient state in the United States on both a per capita basis (8 metric tons of energy-related carbon dioxide per person) and a per GDP basis (112 metric tons of energy-related carbon dioxide per 2009 million dollars of GDP).

Sources: U.S. Energy Information Administration, State Energy Data System, and EIA calculations made for this analysis.

CARBON INTENSITY OF THE ECONOMY BY STATE



PER CAPITA ENERGY-RELATED CARBON DIOXIDE EMISSIONS





Renewable Energy

STATE POLICY GOAL
FOR RENEWABLE ENERGY

The Climate Act mandates that at least 70% of New York's electricity come from renewable energy sources such as wind and solar by 2030 (70x30).

As a companion to the Climate Act, the Accelerated Renewable Energy Growth and Community Benefit Act followed in the Spring of 2020 to address the urgency of our climate transition. The intent is to integrate the acceleration of permitting timelines, seeking regulatory efficiencies, mandating careful study of our electricity grid and the identification of priority upgrades, and deepening community engagement. Armed with the nation's most aggressive climate goals and expedited processes to match, achievement of the 70 x 30 mandate will move the State closer to delivering just, equitable climate action to New Yorkers, including improving air quality, buttressing a more resilient grid, and spurring a clean economy through investments, workforce development, and job creation.

In the 21st Century, the future is electric and NYSERDA is working tirelessly to remove barriers and deliver our State's goals and benefits to New Yorkers—including more than \$17 billion in net benefits estimated over the lifetime of Tier 1 and offshore wind procurements under the CES.

Mission Outcome:

Renewable Energy



NYSERDA'S ROLE

Facilitate the next decade of steady, predictable procurements

for renewable and zero-emission generation, offering market confidence and stability to supply chains.

Support smart siting policies to maximize co-benefits between industries, cultivate infrastructure ecologies, and build community and stakeholder engagement.

Support climate equity through the prioritization of benefits and workforce development and training delivered to Disadvantaged Communities across the State through renewable energy development.

Drive supply chain localization, local investments, job creation, and workforce capabilities.

Reduce costs by delivering economies of scale, removing barriers to deployment, and supporting innovation.

Plan for the renewable grid of the future by identifying and supporting priority grid investments that facilitate movement of new renewable energy across the State, and the policies and planning necessary to maximize the benefits of renewable energy for ratepayers and communities.

STRATEGIES FOR 2021–2024

- Accelerate implementation programs to achieve the Climate Act's 70x30 renewable goal as part of the next generation of the Clean Energy Standard, including launch of a new Tier 4 focused on delivering clean energy directly into Zone J/New York City.
- Continue the sprint toward the 6,000 MW solar goal by 2025 and beyond, 3,000 MW of storage, 9,000 MW of offshore wind targets, and the delivery of benefits to Disadvantaged Communities.
- Collaborate with market participants to complete technical studies and promote infrastructure investments like transmission and energy storage that will unlock system efficiencies and unbundle resources to drive progress on our goals and ensure cost savings to ratepayers.
- Collaborate with utilities and other market participants to build transparency in interconnection processes, overcome grid constraints on project capacity, and pricing/curtailment issues.
- Develop and launch new planning and execution framework for at least 9,000 MW of offshore wind by 2035, as a successor to NYSERDA's Offshore Wind Master Plan.
- Engage in detailed sector studies of evolving resiliency design approaches and best practices to mitigate future climate risks and to deepen the carbon performance of projects through reducing embodied carbon.



HIGHLIGHTED PROGRAMS AND INITIATIVES

New York State continues to grow a strong pipeline of projects to meet the 70x30 goal. As of September 30, 2020, there were approximately

47 GW of active renewable energy projects in the NYISO interconnection queue.

Additionally, there are currently 56 projects in the Active Article 10 Queue, with five applications being approved in the last year, indicating more of the pipeline is coming to fruition. There have been 868 MW of storage awarded statewide, along with 2.5 GW of installed distributed solar and a pipeline of 2 GW (high project maturity—lower than 10% attrition).

INDICATORS OF PROGRESS

- MWh: progress toward the 70x30 and 100x40 targets
- MW and facilities (large-scale, offshore, and behind-the-meter) completed and in the pipeline: progress toward goals
- Benefits of renewable energy investments accruing for disadvantaged communities (%) and M/WBE engagement
- Private market investment, clean energy jobs, and costs per Renewable Energy Credit (REC)

Large-Scale Renewables

supports the development of large-scale renewable energy projects.

Offshore Wind establishes a significant, cost effective, renewable generation source with promise of new industry in New York State.

Build-Ready is a new program that complements private sector development and expedites the pre-development of large-scale renewable assets with **a focus on underutilized, previously developed sites.**

Community Solar makes solar affordable and accessible for all New Yorkers.

Solar for All makes subscriptions to community solar projects available at no cost for low-income consumers.

NY-Sun and Energy Storage drive distributed solar adoption through residential/commercial rooftop and larger community solar projects, reducing costs, making solar accessible to all New Yorkers, while deploying 1,500 MW of energy storage by 2025 with a goal of realizing a self-sustaining market.

Raise the Green Roof is a new collaboration between NYSERDA, the NY Green Bank, and Homes and Community Renewal (NYSHCR) to deploy solar and energy efficiency retrofits throughout NYSHCR's affordable housing portfolio, aiming to bring solar to approximately 5,000 affordable housing units statewide.

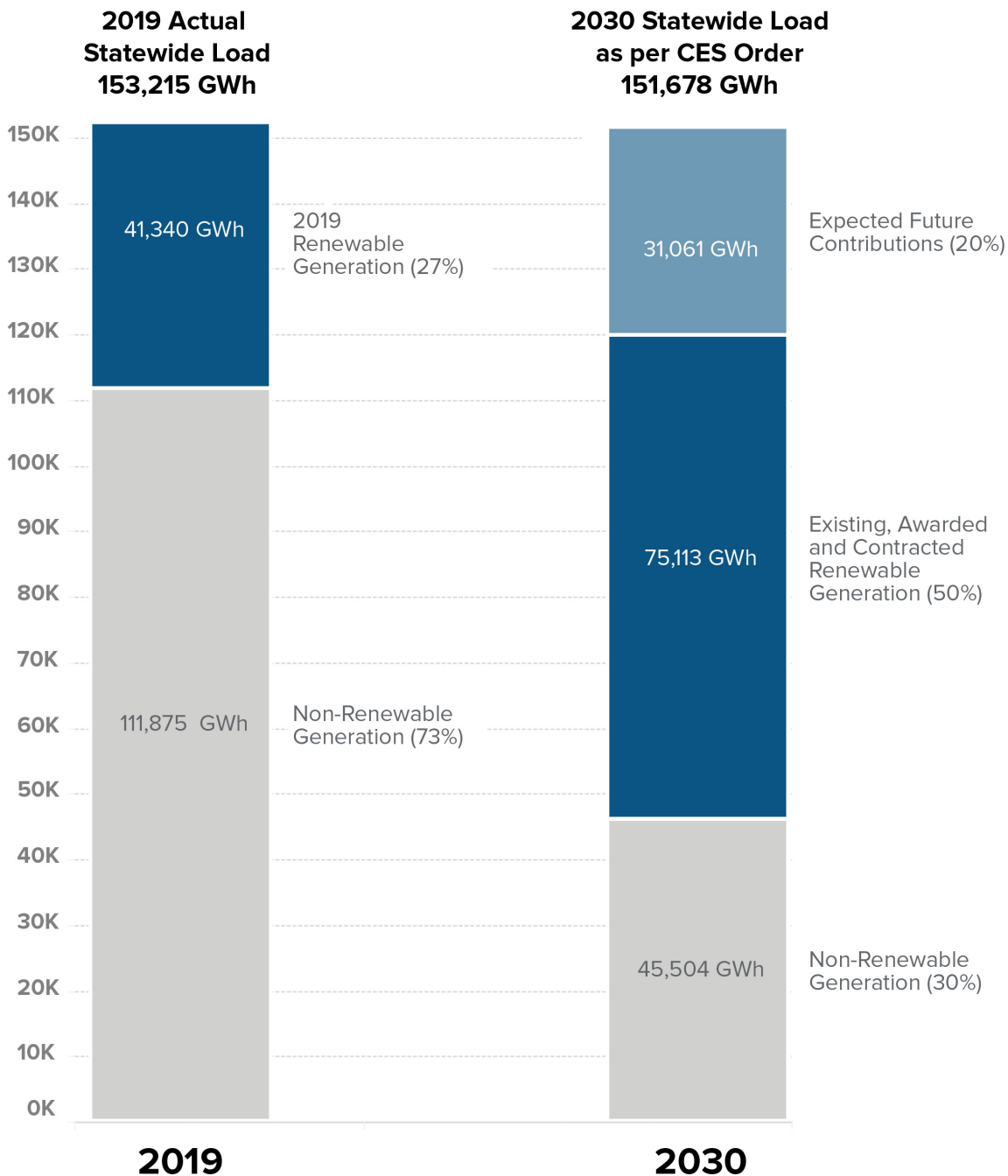


2030 Clean Energy Standard target: 70% electricity from renewable sources

PROGRESS TOWARDS 70X30 GOAL

106,174 GWh to reach goal*

** GWh required to meet goal is based on 2020 Clean Energy Standard Order load projection for 2030 and is subject to future adjustment.*





New York's Projected 2030 System Mix

To-be-Contracted:
NYSERDA Offshore Wind

12%

Awarded and/or Contracted:
NYSERDA Land-Based Renewables

Awarded and/or Contracted:
NYSERDA Offshore Wind

5%

NY-Sun
5%

To-be-Contracted:
NYSERDA
Land-Based
Renewables
15%

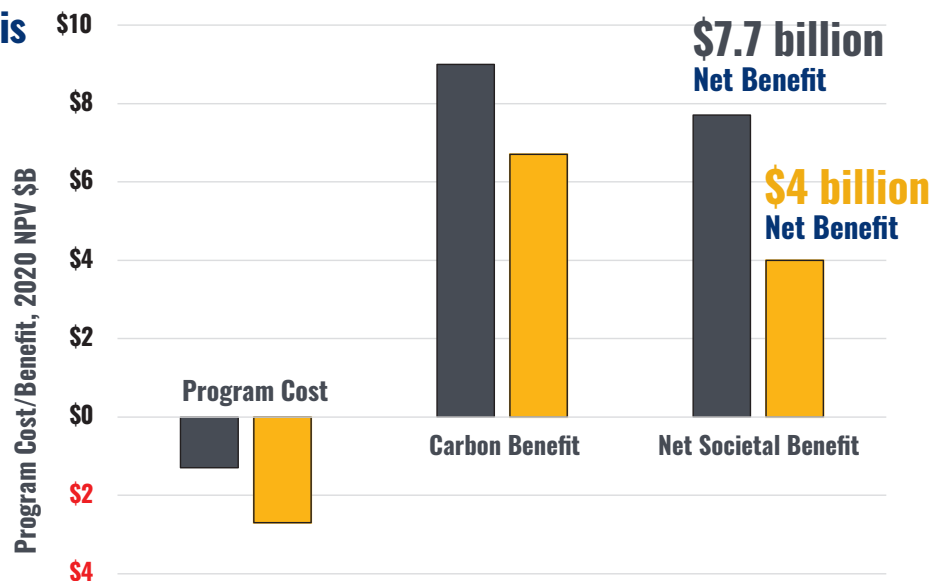
Non-Renewables
30%

Baseline
Renewables
27%

Under Contract: NYPA and PSEG
1%

Costs and Benefits Analysis to Reach 70% Renewable Electricity by 2030

■ New Land-Based Renewables
■ Offshore Wind





The Climate Act ramps up renewable energy goals, including:

QUADRUPLING NEW YORK'S OFFSHORE WIND TARGET TO

9,000 MW BY 2035

up from 2,400 MW by 2030

DOUBLING DISTRIBUTED SOLAR DEPLOYMENT TO

6,000 MW BY 2025

up from 3,000 MW by 2023

PSC PROCESS TO AMEND CLEAN ENERGY STANDARD

In October 2020, the PSC approved the expanded Clean Energy Standard requiring that:

- a minimum of 70% of statewide electricity be renewable by 2030.

Future proceedings will similarly require:

- statewide electricity be zero-emission by 2040.



Energy Efficiency and Building Decarbonization

STATE POLICY GOAL
FOR ENERGY EFFICIENCY AND
BUILDING DECARBONIZATION

New York set a 2025 statewide energy efficiency target of 185 TBtu of cumulative site energy savings which was codified by the Climate Act.

While this target will deliver one-third of New York's interim 40x30 climate goals, the 185 TBtu energy efficiency goal is the beginning of a much more ambitious change needed to decarbonize buildings consistent with Climate Act. Building energy efficiency and electrification will play a dominant role in putting the State's building sector on a course to carbon neutrality, while creating better living and working spaces for New Yorkers and economic opportunity in the form of clean energy jobs. Advances in load flexibility will minimize the grid impacts of statewide beneficial electrification of buildings. Efforts will also focus on delivering benefits to disadvantaged communities and low- and moderate-income New Yorkers.

Mission Outcome:

Energy Efficiency

and Building Decarbonization



NYSERDA'S ROLE

Develop and manage programs to eliminate barriers and increase adoption of energy efficiency and electrification, providing financial and technical assistance to solution providers and consumers, particularly low- and moderate-income consumers.

Develop and demonstrate strategies to achieve deep energy and carbon savings.

Deliver policy leadership on energy efficiency and building electrification through Climate Action Council, Energy Efficiency and Housing Advisory Panel, Carbon Neutral Buildings Roadmap, and Building Electrification Roadmap.

Provide technical assistance to advance energy codes, appliance standards, and building mandates, supporting structural improvements in energy efficiency and emissions reductions across the State.

Provide financing for energy efficiency and building electrification market participants.

STRATEGIES FOR 2021–2024

- Complete the carbon neutral buildings and building electrification roadmaps to identify strategies and paths to accelerate transition of New York's building stock to incorporate deep efficiency, more efficient electric heating and cooling technologies, and grid-connected capability.
- Drive deeper levels of efficiency and carbon savings in buildings using a variety of strategies, including peer-based challenges, support of long-term energy planning within the capital improvement cycle, incorporation of sensors/advanced analytics to improve operations, demand aggregation, supply-side engagement and other cost compression strategies, as well as development and demonstration of new solutions to deliver higher performing, healthier buildings.
- Develop a robust portfolio of programs for low-income consumers and disadvantaged communities, in coordination with utilities and housing agencies.
- In partnership with utilities, launch a comprehensive building electrification initiative with consumer incentives and market support to move New York toward all-electric homes and buildings and accelerate transition away from natural gas and fossil fuel.
- Build market demand by increasing consumer awareness and providing decision-quality information on energy efficiency and building electrification opportunities for building owners and tenants—capitalizing on key points in a building life cycle (e.g., tenant turnover, major renovations, property transfer, equipment replacement).
- Support statewide building decarbonization through improved appliance standards, building mandates, and advanced building codes, with 2030 goals of establishing a low energy use intensity energy code combined with a mandatory zero on-site GHG emissions building code and using appliance standards and building mandates to promote decarbonization in existing buildings.
- Provide support for consumers in gas constrained areas of New York by providing information and assistance to adopt energy efficiency and clean heating solutions.



HIGHLIGHTED PROGRAMS AND INITIATIVES

2025 energy efficiency targets will reduce energy consumption by the equivalent of 1.8 million homes annually and create as many as 50,000 new jobs

INDICATORS OF PROGRESS

- Avoided energy use: total TBtus across all fuels (natural gas, electricity, etc.)
- GHG emission reduction from the building sector (annual CO₂e)
- Benefits of energy efficiency investments accruing to disadvantaged communities (%) and reduced on-site fossil fuel combustion in environmental justice (EJ) Areas
- New York State's Clean Energy Dashboard can be used to track indicators of progress, found at nyscrda.ny.gov/view-clean-energy-dashboard.

Public Service Commission Orders on New Efficiency: New York doubled utility investment in energy efficiency, created a nation-leading building electrification initiative (NYS Clean Heat), and advanced an \$800 million investment in LMI Energy Efficiency.

Healthy Homes Pilot with Department of Health integrates health services with home energy efficiency improvements and safety measures.

Indoor Air Quality and Energy Efficiency Pilot identifies ways to mitigate spread of COVID in buildings, while optimizing energy efficiency.

EmPower New York and Assisted Home Performance provides no- and low-cost energy efficiency solutions to income-eligible New Yorkers.

Home Comfort Pilot develops standardized envelope solutions that improve energy performance and make homes heat pump ready.

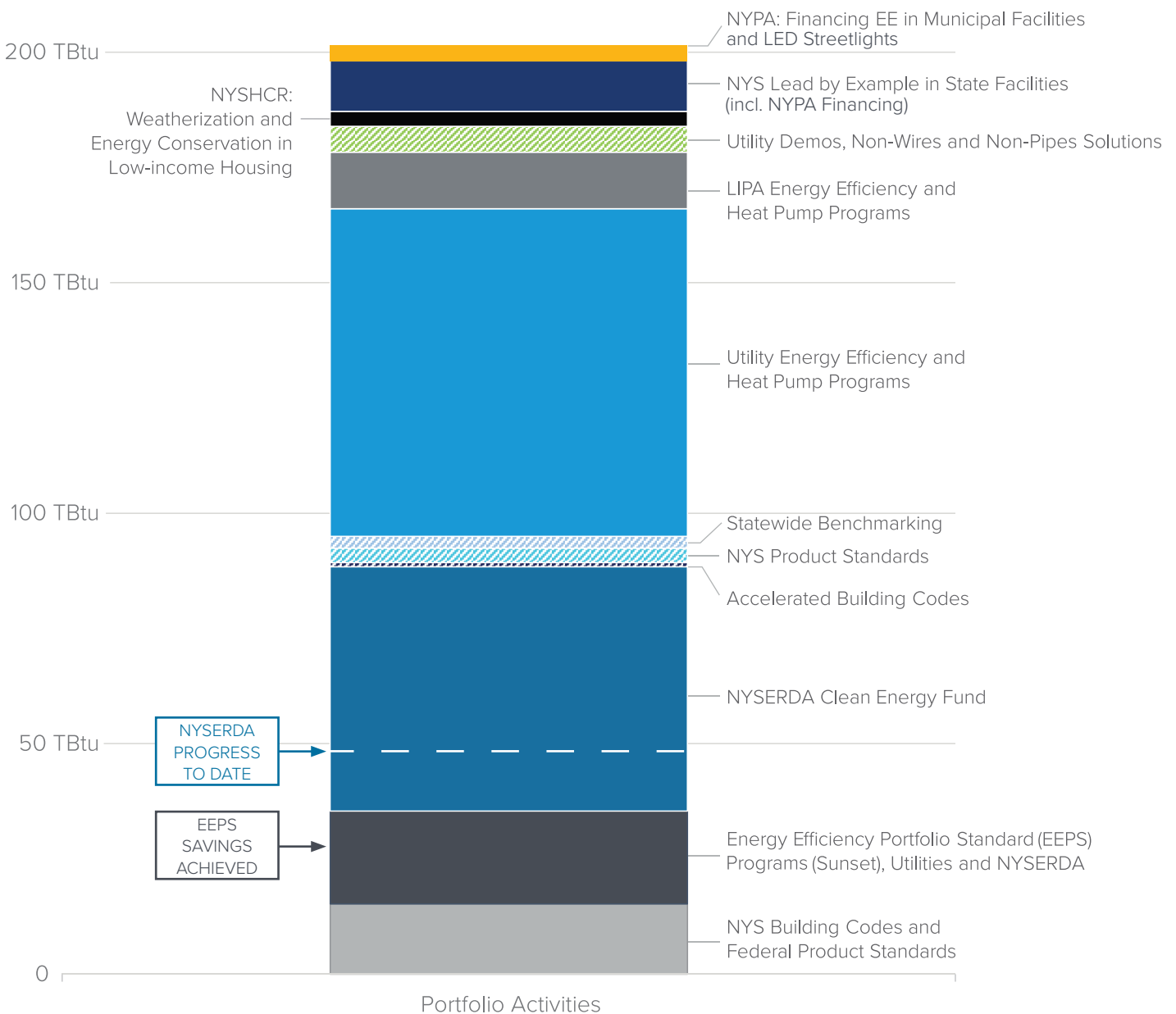
Buildings of Excellence competition recognizes and rewards the design, construction, and operation of very low or zero carbon emitting multifamily buildings.

Empire Building Challenge demonstrates low-carbon solutions for tall buildings, in partnership with real estate industry and solution providers.



2025 target: 185 TBtu of onsite energy savings*

ENERGY EFFICIENCY ACTIVITIES TOTAL SITE TBTU SAVINGS
BY 2025 (CUMULATIVE ANNUAL, 2015–2025)



* Graphic does not reflect roughly 15 TBtu of overlap between policies



Clean Energy Economy

STATE POLICY GOAL
FOR THE CLEAN ENERGY ECONOMY

With nearly 165,000 clean energy jobs across the State at the end of 2019 (pre-pandemic)—and with nearly triple the rate of statewide job growth from 2018 to 2019—New York’s nation-leading climate policies continue to drive investment and job-creation.

Despite projections for additional growth in the near-term, the State’s clean energy sector suffered an enormous setback in 2020 due to upwards of 20,000 unemployment claims filed in the immediate aftermath of the coronavirus pandemic. Subsequent job rebounds have shown tremendous resilience in the sector—only 8.1% of New York’s clean energy workers who lost their job remain unemployed as of November 2020, compared to three out of four clean energy workers who lost their job nationally. Nonetheless, the State needs the clean energy industry to continue to grow and thrive in the years ahead, helping drive a sustainable and equitable economic recovery for New York.

Mission Outcome:

Clean Energy Economy



NYSERDA'S ROLE

Unlock new job growth, leveraging marquee program investments such as offshore wind port infrastructure and competitions for deep building retrofits to bring global industries to New York.

Provide workforce development and training programs to grow the training capacity and human resources needed to build the clean energy economy, and support a just transition for historically disadvantaged populations and industries affected by the transition away from fossil fuels.

Cultivate demand for clean energy solutions to attract clean energy companies from all ends of the global supply chain looking to serve the growing local market, supported by proactive cross-agency attraction efforts.

Foster capital attraction and support commercialization of products, services, and business models (deployment models) from clean energy startups and maturing companies.

Deliver more targeted assistance to energy startups/innovation firms, leveraging support from federal stimulus efforts and future federal incentives to advance clean energy innovation.

Establish precedent for encouraging greater private sector investment and business models through new, substantial commitments of institutional capital in the clean energy economy.

Achieving the Climate Act's nation-leading goals and building back a thriving industry sector will mean expanded deployment of existing technologies as well as substantial investment in the State's clean energy innovation economy to develop new solutions for a low-carbon future. New York's ecosystem of start-ups will develop these technology and business-model solutions for demonstration and use in the State, as well as for export to markets across the globe. Furthermore, to build an inclusive clean energy economy and cultivate a just transition, NYSERDA, other State agencies, and clean energy industry partners will be ramping up efforts to develop a pipeline of skilled labor and open-up economic opportunities to workers, communities, and historically disadvantaged populations who may be transitioning from fossil fuel-based economic activities.

STRATEGIES FOR 2021–2024

NY Green Bank

- Increase the size, volume, and breadth of sustainable infrastructure investment activity throughout the State, expand the base of investors focused on clean energy, and increase market participants' access to capital on commercial terms.
- Address barriers to mobilization of private capital and financing for clean energy projects: identify where barriers exist, demonstrate investment model, entice private capital, and repeat.
- Support priority policy areas through a growing pipeline of investments in energy efficiency, energy storage, electric vehicles, affordable housing, offshore wind port infrastructure, and beyond.
- Consistent with the goals of the CLCPA, launch a new initiative to invest in projects that support and deliver benefits to disadvantaged communities.
- Explore and refine new financing models (e.g., energy efficiency pay-for-performance) and new technology/solution areas (e.g., microgrids).
- Continue issuing targeted RFPs and organizing convenings in strategic areas to grow the clean energy investment pipeline.
- Remain supportive to counterparties through the future stages of the pandemic and economic recovery, including through Paycheck Protection Program (PPP) loan administration, investment term flexibility, and more.



Innovation

- Support the development of climate technologies necessary to meet the State's Climate Act goals through funding, team-building, customer introductions, advisory services, and the development and support of independent innovation organizations.
- Address barriers and support regulations, processes, and rulemaking that enable, a robust climate innovation economy by stimulating demand and supporting private sector innovation efforts
- Invest in the development of the New York's green economy, supporting relocation of climate-tech companies to New York, the growth of existing companies already in the State, and the human capital of the innovation ecosystem across the State.
- Consistent with the goals of the Climate Act, ensure the State's innovation development system, as well as the innovations developed, deliver benefits to disadvantaged communities.
- Coordinate and partner with the national innovation ecosystem to align and leverage State priorities and support New York climate-tech companies' access to finance and expertise
- Continue to support priority climate innovation firms through future stages of the pandemic and economic recovery

Workforce Development

- Prioritize recruitment, training, job preparedness, and placement for priority populations and disadvantaged communities
- Develop training infrastructure to upskill existing workers and prepare the next generation of clean energy workers in high-growth areas like high-efficiency HVAC, building electrification, energy storage, and offshore wind
- Ensure training curricula and programmatic support respond to industry and market needs
- Provide targeted support to reduce the time it takes to bring a new worker to full productivity and offset risks that might prevent clean energy firms from hiring or training new workers, particularly workers with additional barriers to employment

**New York's
clean energy
industry can
help drive a
sustainable
recovery for
the State's
economy**



INDICATORS OF PROGRESS

- Statewide Clean Energy Industry Jobs
- Priority populations trained and employed in clean energy
- Commercialized climate solutions and launches of incubated firms, including related revenues
- Total value of capital mobilized using NY Green Bank support



NYSERDA'S INNOVATION ROLE: SUPPORT BY STAGE



1
PHASE

Startup Formation

- Proof of Concept Centers
- Proof of Concept R&D Grants
- Accelerator Programs
- Entrepreneurs-in-Residence



2
PHASE

Develop and Market Test

- Incubators
- Ignition Grants
- Entrepreneurs-in-Residence
- Research, Development, and Demonstration Grants and Collaboration



3
PHASE

Commercialize

- Incubators
- NY Climate Progress
- Manufacturing Corps
- Entrepreneurs-in-Residence
- NYS Cleantech Venture Exchange
- Research and Technology Consortia
- Commercial-Scale Technology Demonstrations



4
PHASE

Launch at Scale

- Manufacturing Corps
- Entrepreneurs-in-Residence
- NYS Cleantech Venture Exchange
- Novel Business Models

Visit nyserdera.ny.gov/innovation for more information on these programs.



HIGHLIGHTED PROGRAMS AND INITIATIVES

NY Green Bank works with the private sector to increase investments into the State’s clean energy markets, including through transactions related to:

- Community solar/Community distributed generation
- Affordable housing and energy efficiency
- Electric vehicles, charging infrastructure, and clean transportation
- Energy storage

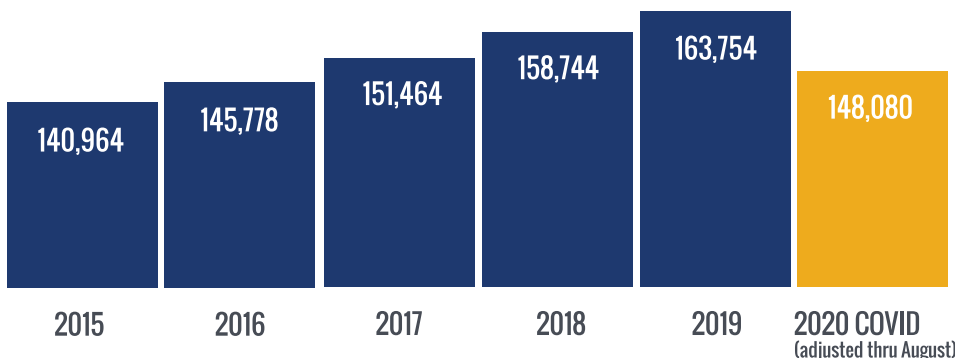
Innovation supports an affordable and just transition and the achievement of New York’s climate goals through investments in and advisory services to researchers and companies, including:

- Tech to Market resources including climatetech incubators such as Urban Future Lab; cleantech accelerators like the Clean Fight and Cleantech Open Northeast; the M-Corps manufacturing scaleup program; and the Entrepreneur in Residence (EIR) mentorship program at Columbia University
- New York Climate Progress, a catalytic convertible note program for climatetech companies
- Natural Carbon Solutions, leveraging farms, forests and under-utilized lands to reduce GHG emissions and increase carbon sequestration
- Long-duration energy storage solutions supporting firm capacity requirements for a clean grid
- Next Gen HVAC program, accelerating the mitigation and phase-out of high global warming potential refrigerants

Workforce Development supports training for new clean energy workers, driven by industry needs, and develops the clean energy sector talent pipeline:

- HVAC/Building Electrification Career Pathway Program
- Building Operation and Maintenance Staff Training
- On-the-Job Training
- Clean Energy Internships
- Clean Energy Talent Pipeline Development

ANNUAL CLEAN ENERGY EMPLOYMENT IN NEW YORK (2015-2020 COVID-ADJUSTED)

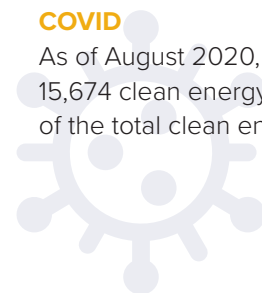


- Clean energy jobs represented almost 1.7% of all employment within the State.
- Between 2018 and 2019, clean energy employment increased by 3.2%, outpacing the total New York employment growth of 1.1%

COVID

As of August 2020, New York lost 15,674 clean energy jobs, about 9.6% of the total clean energy workforce.

5k clean energy jobs restored since COVID-19 re-opening in May 2020





Resilient and Distributed Energy System

STATE POLICY GOAL
FOR THE ENERGY SYSTEM

Build a resilient and distributed energy system that can anticipate, absorb, adapt to, and recover quickly from a wide range of shocks and stresses, including climate, environmental, cyber, financial, aging infrastructure, and other emerging vulnerabilities.

In this period of dynamic and fast-paced change, marked by a global pandemic, wildfires, extreme storms, record-breaking heat, and cyber threats, the energy system faces a range of new risks and disruptions, even as the system moves away from a more vulnerable centralized power generation towards an increasingly balanced, diversified, and digitalized network.

As New York strives to meet its aggressive climate targets, the State will have to contend with new risks and opportunities.

With electric power enabling nearly all critical infrastructure and services, including communications, emergency systems, banking, and transportation, it is crucial that the transition to clean energy and net zero emissions also advances via a resilient and modernized grid. This includes considerations for infrastructure given changing flood zones, sea level rise, and storm surge zones as well as new solutions and designs to withstand high windspeed, hail, and higher temperatures, and advancements in flexible, responsive resources such as energy storage and building load flexibility. Measuring and valuing risk reduction and resilience can help catalyze opportunities to harness the market system in service of these important goals.

Climate impacts land disproportionately on disadvantaged communities—populations that often have fewer resources to respond—so it is vital that investments also address questions of equity with targeted approaches for vulnerable communities. To this end, building a resilient and distributed energy system can also generate new workforce opportunities and create avenues to strengthen social cohesion, a quality of community resilience, through citizen engagement with shared energy and infrastructure.

Mission Outcome:

Resilient and Distributed Energy System



NYSERDA'S ROLE

Lead-by-example by factoring resilience goals in the State's clean energy infrastructure investments.

Partner with other State agencies to identify and implement best practices around climate resilience.

Spearhead next generation of climate adaptation research to provide insights for infrastructure, investment, and energy system planning decisions based on new/updated climate projection data.

Spur development and integration of a wide array of **smart grid technologies** that support a distributed energy system and advance resilience including storage, smart demand response, and vehicle to home/grid (V2H/G) flexible charging.

Continue to administer and refine flagship distributed energy resources (DER) programs like NY-Sun, and energy storage incentive programs to boost resilience, provide grid value, and reduce costs.

STRATEGIES FOR 2021–2024

- Incorporate resilience considerations into NYSERDA programs, including floodplain mapping, onsite generation and storage, and other means to ensure investments factor in shifts like increased electrification, future climate impacts, and other energy system disruptions.
- Explore potential mechanisms for the finance and insurance of resilient energy infrastructure, in partnership with the Department of Financial Services.
- Spur development and integration of smart grid technologies to ensure buildings are flexible and responsive under changing conditions, with a focus on load pockets where environmental and health outcomes are critical (e.g., disadvantaged communities).
- Support resiliency and grid flexibility, i.e., balance the growing intermittent renewable resources. Continue efforts to scale up energy storage to achieve statewide goals, with a focus on the Downstate region where energy storage is critically needed to replace dirty peaker plants, support grid congestion, and offshore wind procurements.
- Drawing from the Carbon Neutral Buildings Roadmap work, develop solutions for resilient communities and resilient housing focusing on passive survivability, resilience solutions for all-electric buildings and facilities of refuge to withstand future disruptions to the energy system.



HIGHLIGHTED PROGRAMS

Innovation's Smart Grid team and the Technology to Market team will launch **initiatives to support a resilient, affordable, flexible clean grid.**

New York Power Grid Study as required in April 2020 Accelerated Renewable Energy Growth and Community Benefit Act legislation

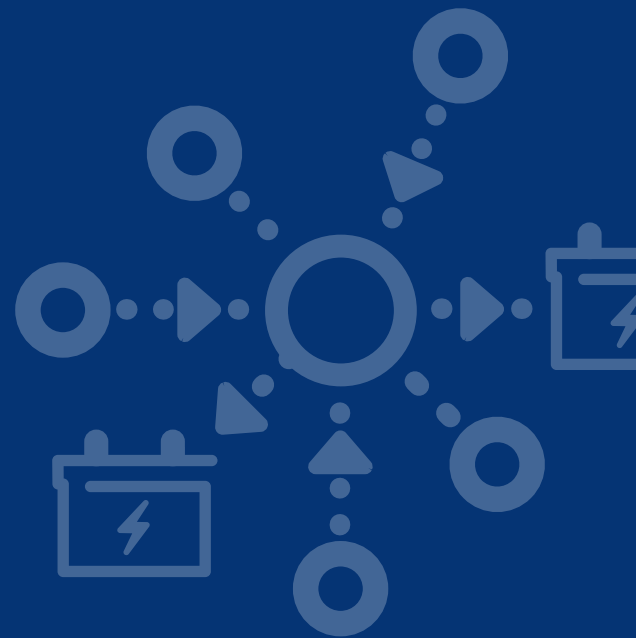
Energy Storage engages those involved in building, installing, integrating, or researching energy storage technology, including efforts to expand opportunities to pair solar and storage statewide (continuing and expanding the strong Residential PV + Storage program on Long island through the DLM tariff).

Fuel NY makes fueling stations resilient to power system outages.

Offshore Wind, including new analysis and program measures related to resilience.

Real Time Energy Management provides the ability to shed or shift loads in response to grid needs as well as the capability to stage critical equipment to maintain building services most needed to support safety and recovery.

Carbon Neutral Buildings Roadmap places strong emphasis on resilience with a full chapter dedicated to resiliency considerations related to building decarbonization.



INDICATORS OF PROGRESS

- Progress toward storage (3,000 MW by 2030) and distributed solar (6,000 MW by 2025) deployment goals
- Statewide grid-interactive building load
- Percentage of NYSERDA solicitations that incorporate resilience provisions

Building an Inclusive Clean Energy Economy



LONG-TERM VISION AND VALUE PROPOSITION

New York State’s frontline communities, including environmental justice, LMI, communities of color, and otherwise disadvantaged¹ communities, have disproportionately been impacted by energy costs; pollution from fossil fuel combustion; disinvestment in housing; systemic inequities in education and workforce opportunities; and limited ability to engage in and inform policy making that would affect their community.

Realizing the objectives of the Climate Act will require foundational shifts in the development and implementation of clean energy policy, programs, and processes to ensure opportunities for residents and disadvantaged communities to participate in and benefit from the clean energy economy.

A strong and inclusive clean energy economy will lead to economic opportunities, improved health outcomes, and engagement for all New Yorkers.

¹ As part of the implementation of the Climate Act, the Climate Justice Working Group is charged with developing criteria for disadvantaged communities for prioritization and benefit through New York State investments in clean energy.



In advancement of the Climate Act objectives, the NYSERDA clean energy portfolio will focus investments to improve energy affordability; reduce pollution from fossil fuel combustion across all sectors for environmental justice; create new economic development opportunities for communities and advance workforce development and training for underserved residents.

In addition, NYSERDA will focus on community capacity development and engagement to ensure the perspectives of residents are incorporated into the development and implementation of clean energy initiatives. Improving diversity, equity, and inclusion within NYSERDA staffing, procurement, and strategic development will also be prioritized to ensure the operations and practices of the Authority can be more representative of and responsive to the diverse needs of New Yorkers.

KEY CHALLENGES/BARRIERS

- Systemic and institutional inequities have led to limited opportunities for communities of color and other frontline or disadvantaged communities to participate in and benefit from the clean energy economy, including access to green jobs, ownership of distributed energy resources, and informing policy and programs.
- Energy burden for lower-income households can exceed 20% of annual income, and nearly half of the population has annual income below 80% of the Area Median Income, with overrepresentation of communities of color.
- Access to capital, split incentives, and historically fragmented administration of key programs present barriers to scaling adoption of clean energy solutions in the LMI market segment and within disadvantaged communities.
- Size of income-eligible/disadvantaged population requires innovative approaches to achieve scale, with precautions tailoring program/policy designs to avoid regressive outcomes/impacts.
- Engaging with disadvantaged communities and bringing their voice to the table is inherently challenging given chronic lack of resources in LMI and EJ communities.



NYSERDA is positioned to drive equity and the realization of an inclusive clean energy economy through its direct investment, as well as through its work with State agencies, utility companies, and community-based organizations.



PRIORITY ACTIONS FOR NEW YORK

- Work toward a goal of driving 40% of the benefits of clean energy spending to disadvantaged communities.
- Increase engagement of frontline, climate-vulnerable communities in the development of the clean energy economy, including ensuring community representation in decision-making and policymaking.
- Align State resources and strategy to increase impact of public investment in energy affordability and expand access to clean energy solutions for lower-income households, affordable housing, and disadvantaged communities.
- Leverage regulatory, policy, and financing mechanisms to increase adoption of clean energy solutions in affordable housing, including beneficial electrification.
- Facilitate a just transition to a clean energy economy by supporting unemployed or underemployed workers and priority populations by addressing barriers to workforce training and job opportunities for residents of disadvantaged communities and priority populations.
- Advance resilience to climate change and extreme weather events within affordable housing and disadvantaged communities through clean energy solutions such as solar, battery storage, and passive house standards.
- Advance access to clean transportation for residents of disadvantaged communities and accelerate the transition from fossil fuel to electric vehicles in EJ areas to reduce emissions and address air quality issues.
- Develop solutions and models for deploying utility-scale DER, clean transportation solutions, and energy efficiency in the built environment to reduce emissions and harmful co-pollutants for disadvantaged communities.
- Quantify and maximize health and other non-energy benefits associated with clean energy improvements in disadvantaged communities.
- Develop path for decarbonizing the State's affordable housing, including developing models for advancing beneficial electrification across the LMI market segment.



NYSERDA KEY ACTIONS FOR 2021–2024

- **Build community capacity** by supporting community-based organizations through efforts to engage residents and increase awareness of clean energy solutions, advance economic development opportunities, and facilitate input in policy and program decision-making.
 - **Ensure robust engagement opportunities** to better democratize program planning and design processes by providing a structured engagement process and financial support for stakeholders to participate in the process.
-
- **Establish an Environmental Justice Fellowship** to bring perspectives on environmental and climate justice into policy and program design and provide training opportunities for a more diverse population.
 - **Develop replicable solutions** to advance beneficial electrification across the LMI market.
 - **Develop innovative community-level interventions**, such as implementing approaches for geographic eligibility and advancing community-scale distributed energy resources such as district geothermal and community solar to benefit disadvantaged communities.
 - **Explore and advance models for community ownership** of distributed energy resources.
 - **Develop an approach for quantifying and monetizing the benefits of clean energy adoption**, including affordability, health outcomes, resilience, and beyond.
-
- **Integrate clean energy subsidies** from NYSERDA and utilities into **affordable housing finance** to advance the energy performance of these buildings and deliver co-benefits to tenants.

■ **Prioritize workforce development** and advance employment opportunities to support disadvantaged communities, transitioning underemployed and unemployed workers into the clean energy industry, while also training the next generation of entrepreneurial cleantech leaders.

■ **Develop and implement a statewide portfolio of energy efficiency** initiatives with utilities to increase the impact and reach of LMI clean energy initiatives.





ILLUSTRATIVE INITIATIVES TO ADVANCE AN INCLUSIVE CLEAN ENERGY ECONOMY BY PORTFOLIO

MARKET DEVELOPMENT / ENERGY EFFICIENCY

Clean Green Schools – funding solutions for eligible P-12 schools to reduce school energy use and assist in the conversion to carbon-free fuels

EmPower New York – no-cost and discounted efficiency solutions to income-eligible New Yorkers, helping save energy and money

Technical Assistance and Predevelopment – support for housing agencies, contractors, developers, and builders for clean energy, high-performance building, and retrofits

Beneficial Electrification for LMI and Affordable Housing – replicable solutions for heat pump adoption in the LMI and affordable housing sectors, while ensuring customer protections

Community-Based Workforce Development – community-based training partnerships between clean energy businesses, training organizations, industry associations, and un/underemployed residents in disadvantaged communities

On-the-job training for priority populations – support for clean energy businesses to hire persons from priority populations

Career Pathways Funding and Training – solicitation to train and place new entrants to the HVAC and building electrification industry

Climate Justice Corps – funding for fellows to work to improve engagement of disadvantaged communities, identify community-based, climate justice focused projects and solutions, and build capacity of local organizations to advance climate justice

NY GREEN BANK / FINANCE

Financing for Affordable Housing and Energy Efficiency in Disadvantaged Communities – new initiative using financing to catalyze clean energy within the existing capital stack for affordable housing, aiming to invest at least \$150 million in clean energy and energy efficiency solutions that benefit the State's affordable multifamily housing market

Exploring tariff-backed and other innovative, inclusive financing models – approaches to overcome LMI/disadvantaged communities finance challenges, stabilize energy costs, and improve air quality in disadvantaged communities

Partner with other agencies to explore innovative opportunities to put NY Green Bank capital to work, including new areas such as energy resiliency

Green Jobs–Green New York (GJGNY) – provides New Yorkers with access to energy assessments, installation services, low-interest financing, and pathways to training for various green-collar careers

Cultivating diverse ecosystem of investment partners and counterparties – explores funding to cover transaction costs and/or pro bono/in-kind transaction support

NY-SUN / DISTRIBUTED ENERGY RESOURCES

Solar for All – utility bill assistance program funding solar to benefit homeowners/renters unable to access solar

Affordable Multifamily Housing Incentive – PV installations serving affordable housing properties

Raise the Green Roof – pre-development support and financing for solar and efficiency deployed in Homes and Community Renewable's (HCR) affordable housing portfolio

Technical Assistance and Predevelopment – grants to address key barriers to PV and storage projects providing benefits to LMI, Environmental Justice and disadvantaged communities

Community Solar, Solar paired with Storage, and Energy Efficiency – incentive adders for community PV, projects that pair PV and energy storage and provide resiliency and/or financial benefits to LMI customers and affordable housing

Peaker Reduction and Replacement – project deployments that support the potential for solar and energy storage to repower, replace, and back-down electric generating peaker units



INNOVATION AND RESEARCH

Advanced HVAC Challenge – heating and cooling technology innovations targeting common LMI building types and needs

Innovation for Affordable Decarbonization – investments designed to reduce the cost of clean energy through optimization of the power grid, clean building technologies, and clean gas and liquid fuels

Evolving work on resilience – tools to support adaptation to climate change for all New Yorkers, including those most vulnerable

New York Clean Transportation Prizes – solutions to reduce harmful air pollution in frontline communities and create transportation “green zones”

Clean Personal Mobility Prize – innovative and high-impact approaches that enable access to clean transportation services for disadvantaged and underserved communities

Clean Medium- and Heavy-Duty Vehicle Innovation Prize – innovative and high-impact approaches to medium- and heavy-duty electrification that can be replicated at scale, including for “last-mile” solutions

LARGE-SCALE RENEWABLES

RFP Design – prioritize economic benefits to disadvantaged communities in evaluation of project bids

Agriculture, natural resources and smart siting policies – maximize co-benefits between industries and cultivate infrastructure ecologies (e.g., supporting supplemental income diversification, promoting carbon sequestration through soil enrichment, water quality improvements)

Community Benefits Agreements – support development of robust Renewable Energy Facility Host Community Benefit Program, potentially with specific callout for disadvantaged communities

Transmission planning – active participation in transmission planning to align with project development and seek important partnerships and cultivate benefits with communities

OTHER AUTHORITY-WIDE PRIORITY EFFORTS

Capacity-building and community engagement – Clean Energy Hubs to build local capacity and advance opportunities for residents within the clean energy economy; development of multilingual communication materials; providing financial support to encourage stakeholder engagement in processes; streamlining stakeholder engagement Authority-wide through equitable engagement framework

Community Ownership of Clean Energy and Distributed Energy Resources – New models for community ownership of distributed energy resources

NYSERDA Diversity, Equity, and Inclusion (DE&I) - Strategic Planning Effort to promote DE&I progress Authority-wide

Grow MWBE Contracting – NYSERDA to qualify contractors as Disadvantaged Communities, MWBE

Supporting Clean Energy Jobs and New York's Economic Recovery



LONG-TERM VISION AND VALUE PROPOSITION

New York's nation-leading climate action policies and investments have driven steady growth in the State's clean energy economy, outpacing economy-wide growth for the last three years.

However, like other sectors, the clean energy industry suffered significant job losses as a result of the pandemic, with nearly 20,000 unemployment claims from the clean energy sector in April 2020. Jobs have begun to rebound, but continued investment is needed to address current worker dislocation in the near term and build the labor capacity over the longer term to deliver clean energy solutions at the scale needed to meet Climate Act goals. The State's continued leadership and investment in its clean energy workers and businesses can and will contribute to the pandemic recovery, helping New York build back better and creating the foundation for a just transition in the decades to come, starting with prioritizing training and job placement support for individuals from disadvantaged communities.



KEY CHALLENGES/BARRIERS

- Historically marginalized populations face greater barriers to employment.
- Strains on businesses as a result of the pandemic threaten the recruitment, retention, and training of workers.
- Training partners and platforms struggle to successfully/effectively operate in a COVID-safe world, especially hands-on learning requirements.
- Public, private, and philanthropic resources are increasingly scarce, and in some cases, have constraints on how they can be used (e.g., geography, direct technical training versus wrap-around services).
- Ongoing demographic transitions and retirements require the State to entice new entrants to this energy field and ensure that training is in sync with job placement opportunities.

PRIORITY ACTIONS FOR NEW YORK

- Harness the State's clean energy investments to provide economic opportunity and quality jobs for New Yorkers, including LMI and historically disadvantaged populations.
- Support the work of the Climate Action Council and Just Transition Working Group to ensure workforce development considerations are prioritized.
- Integrate the definition of disadvantaged communities and guidance from the Climate Justice Working Group into workforce-related programs and offerings
- Advocate for climate/clean energy investments as part of State and federal stimulus efforts.

NYSERDA KEY ACTIONS FOR 2021–2024

- **Accelerate pandemic recovery** by promoting localization of clean energy workforce development and economic benefit opportunities to strengthen socio-economic resiliency in the transition to a clean energy economy, particularly in LMI and disadvantaged communities.
- **Create a Climate Justice Corps program** to place fellows working in and for disadvantaged communities to advance local climate action priorities.
- **Scale-up Career Pathways** and other successful models for direct entry in apprenticeships, pre-apprenticeships, and other job-readiness programs—focusing on efficiency and electrification, and building a talent pipeline from disadvantaged communities.
 - ▶ *See career pathways in action on the following pages.*
- **Support build-out of OSW workforce training** supporting SUNY in advancing the Offshore Wind Training Institute (OSWTI), and coordinating industry efforts already underway.
- **Focus NYSERDA's relationship with other agencies and channel partners** on workforce development and training to develop complementary offers that increase collective impact and serve a wider base of workers.
- **Pursue funding opportunities** to complement/supplement our traditional funding sources to deliver wrap-around services (such as funding for transportation, tools, daycare, etc.) to help priority populations pursue clean energy workforce opportunities.
- **Explore novel community-based investments**, including Build-Ready project development to provide workforce support alongside renewable development and leveraging DOL resources where feasible.



43

trained
to date

- 80% are expected to complete the program
- 90% of those, placed into clean energy employment or advanced education opportunities, including post-secondary degree programs and/or national certifications



Green City Force was founded to model a national Clean Energy Corps for equity and opportunity, using service as a means to connect young adults from low-income housing communities who are massively excluded from the job market to emerging jobs and career paths in energy efficiency. They are part of a national network of service and conservation corps working to connect young adults aged 18-24 to opportunity through hands-on experience and wrap-around services.

Energy Service-Learning Pre-pre-apprenticeship

Green City Force has created this essential first step for un- or underemployed young adults to enter a clean energy career pathway.

With NYSERDA's assistance, the Program will train 50 graduates of Green City Force's AmeriCorps program, recruited in partnership with the New York City Housing Authority, on electric lighting and post-construction appliances, solar panel maintenance and energy monitoring, preparing them for work on residential energy efficiency retrofits serving low- to moderate-income families.

Graduates will leave the training with a firm foundation in environmental literacy, professional certifications, and meaningful hands-on experience.

Energy Bootcamp

Green City Force is developing an Energy Bootcamp for graduates (ages 18-24) of its AmeriCorps workforce preparedness program. The training is based on a "pre-apprenticeship" framework, offering exposure, basic foundation training, and hands-on experience as well as a direct connection to industry for full-time employment.

The Energy Bootcamp recruits participants through the New York City Housing Authority and prepares them for residential energy efficiency retrofits serving low- to moderate-income families. The training includes a ROOTS for Success environmental literacy program and leads to Green Building Professional certification. Bootcamp graduates have the opportunity to move on to more advanced technical trainings and/or gain employment with Green City Force's energy service partner companies, including Franklin Energy, Ameresco, and Constellation.

** Training has been put on hold due to COVID-19 and is expected to resume in early 2021.*

Green City Force's overall goal is to develop a comprehensive model from service (pre-pre-apprenticeship phase) to Energy Boot Camp (pre-apprenticeship phase) to employment or actual union apprenticeship in the sustainable buildings sector.

pre-pre-apprenticeship



pre-apprenticeship



employment or union
apprenticeship



Building Automation Systems Training

Stacks + Joules has partnered with UA Maker Academy, South Bronx Community Charter High School, and the Lower East Side Girls Club, to prepare high school seniors from low-income communities and designated environmental justice areas for jobs in the Building Automation System (BAS) industry.

Under the project called “New Collar Careers in Green Building Automation,” Stacks + Joules will teach a cohort of students in computer programming, wireless networking, HVAC and lighting controls, and automated building control systems.

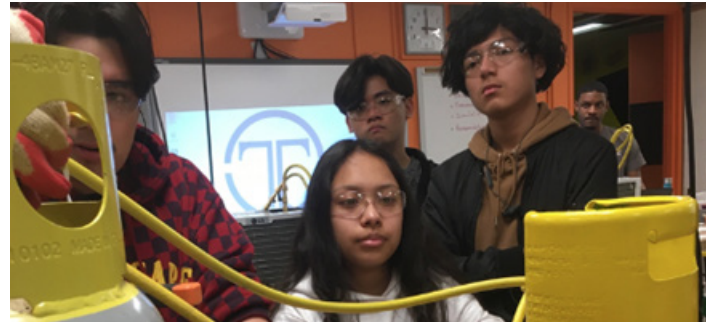
The combination of rigorous technical training, hands-on experience, and mentoring by industry professionals has a profound impact on students’ skills and enthusiasm for joining the energy efficiency workforce. This program leads to professional credentials, preparing students for careers in the energy efficiency and clean technology industry.

In the instantaneous shift to remote learning, most opportunities for hands-on learning became inaccessible. This initially had a negative impact on the students’ ability to really master their understanding of basic HVAC systems. However, in an exciting twist, the experimental approach to training had the unintended consequence of supporting an in-depth understanding of HVAC systems.

Stacks + Joules is using these lessons learned to redesign a strategically blended approach to teaching HVAC and Niagara 4 at the same time.

- 91 industry-recognized certificates earned
- 46 students secured paid internships
- 4 graduates working full time in BAS industry

61
trained
to date



“Close alignment of industry partners and schools helps create opportunities for students to experience professional working atmosphere and learn the technical skills that many employers are not able to find from current college graduates.”

— Luke Bauer, Principal UA Maker Academy

Accelerating the Transition from Natural Gas to a Low-Carbon Future



LONG-TERM VISION AND VALUE PROPOSITION

In order to realize its goals of a carbon neutral economy by mid-century, New York State needs to move away from its dependence on the combustion of natural gas (fossil fuel-derived methane) to heat homes and businesses and power industrial processes.



This pressure will be exacerbated by the on-the-ground imbalances in the near-term of demand and supply for natural gas, especially in the Downstate metropolitan area. Collectively, this transition away from natural gas to lower-carbon energy sources may be one of the most challenging pieces of our decarbonization agenda.

In the near term, we need to drive more uptake of demand-reducing solutions such as energy efficiency and electrification.

Over the longer term, we will need to scale up these solutions and advance new ones. In hard-to-electrify use-cases, the State will need to pursue R&D to prove and deploy deep decarbonization innovations to replace natural gas with alternatives with lower climate impact—such as green hydrogen, renewable natural gas, novel leak-prone pipe detection and prevention methods, and carbon capture, among others.

At the same time, the State must pay close attention to ensure the gas transition is equitable and avoids any regressive outcomes for the shrinking gas customer-base, with a focus on affordability.

KEY CHALLENGES/BARRIERS

- Significant disparity between the societal costs of natural gas (from methane and carbon dioxide) and the costs realized by consumers, resulting in a market signal that is inconsistent with New York’s public policy objectives—natural gas is plentiful, widely available, and affordable for consumers, albeit somewhat artificially so due to historical regulatory rules.
- Affordability of gas makes it favorable not just among residents for home heating and hot water, but also among the businesses and particularly industrial users, where the fuel’s ability to produce high quality, high heat for process applications is prized and where there are few or no commercially available electric solutions.
- While efficient, all-electric alternatives can fulfill most/all residential applications and many commercial ones, alternatives face several limitations, including high upfront cost, lack of awareness among consumers, lack of market infrastructure (familiar installers, marketing), and technical barriers for certain larger buildings.
- Given the affordability barriers of cleaner alternatives, the natural gas transition creates risks for regressive outcomes for those unable to move swiftly off natural gas for heating.
- The existing gas distribution system is a multibillion-dollar asset that will remain in place even as consumption/throughput is reduced, and it needs investments to be maintained to keep people safe.



PRIORITY ACTIONS FOR NEW YORK

- Update GHG accounting to match the Climate Act framework and latest state of science for global warming potential, including 20-year lifetime and upstream impacts of methane.
- Coordinate investments among utilities/agencies addressing Downstate gas supply constraints and promote adoption of clean heating and cooling alternatives.
- Build market capacity, expand product availability, and drive cost reductions in electrification solutions such as air source and ground source heat pumps, as part of NYS Clean Heat.
- Direct better gas system planning, calling for utilities to conduct improved long-term planning of their gas assets taking into account long-term State goals.
- Review natural gas policy structures to ensure that alternative heating solutions can compete on a level playing field (e.g., 100-ft. rule, long-term depreciation).
- Advance emissions recommendations for building and industrial sectors via Climate Action Council, including codes and standards aimed at driving adoption of efficient, low-carbon solutions and alternatives to fossil-fuel derived methane as a fuel for heat/industrial process.
- Take action to preserve and enhance affordability in this transition, particularly to guard against disadvantaged and LMI customers being stuck on the gas system with increasing costs.

NYSERDA KEY ACTIONS FOR 2021–2024

- **Publish long-term roadmaps** for advancing all-electric clean homes and buildings in the State consistent with the goals of a carbon-neutral economy.
- **Expand markets for clean, efficient alternatives** to reduce natural gas consumption via programmatic efforts—clean heating and cooling, energy efficiency, LMI incentives, and other efforts to make electrification a more attractive solution set for a wider range of buildings and owner/occupant combinations.
- **Illuminate and prove-out solution set for LMI/disadvantaged communities electrification**—tailored both to customer segment (keeping housing and energy costs affordable) and building stock differences (remediation, deferred maintenance, electric service upgrades, etc.)—and follow-up with investments at a larger scale via LMI implementation plan.
- **Focus on reducing cost of alternative clean heating/cooling** through innovation—demonstrate heat pump technologies (and other carbon-reducing solutions) in large commercial/multifamily buildings, working with portfolio property owners to define technical needs and performance specs, and engaging manufacturers to deliver/tailor products to meet New York’s building needs.
- **Support innovations** that reduce peak gas demand, and build understanding of, and momentum for, cutting-edge deep decarbonization technology including green hydrogen and carbon capture. Initiatives include the Carbon Foundry to support carbon-to-value R&D and technology transfer, an R&D gaps analysis for green hydrogen, and co-funding of Department of Energy hydrogen projects and initiatives.

Carbon Neutral Buildings Roadmap

A comprehensive roadmap charting New York State’s path to a carbon neutral building stock statewide by midcentury.

Building Electrification Roadmap

A complementary roadmap offering deep-dive on electrification solutions and needs, charting course for progress by 2030.

Fostering Healthy Communities



LONG-TERM VISION AND VALUE PROPOSITION

New York’s diverse communities have a critical role to play in the State’s clean energy transition.

They serve as essential partners both in the rapid expansion of clean energy generation as well as the decarbonization of society—including the built environment and the transportation and industrial sectors—thereby creating healthy, livable environments and supporting larger projects with far-reaching statewide benefits

But to succeed, we need to provide communities with the necessary tools and other resources to carry out this work. On the renewable generation side, new efforts such as the Office of Renewable Energy Siting (ORES), NYSERDA’s Build-Ready program, and the new host community benefits framework, are designed to reduce barriers for localities and overcome obstacles to mutually beneficial project development.



In order to decarbonize the State's building stock by mid-century, New York will have to quickly move beyond a building-by-building approach to a neighborhood-by-neighborhood approach, developing carbon neutral communities.

There are more than 4.5 million buildings in the New York. On a building-by-building basis, more than 400 buildings per day would need to be decarbonized for the next 30 years to cover the entire existing building stock by 2050. The State needs to build scale to succeed, and action at the community-level will be critical.

NYSERDA provides planning resources for community-scale decarbonization projects, and NYSERDA is already supporting several communities as they embark on the decarbonization transition. Integrating decarbonized transportation solutions will also be paramount in proving holistic community-scale climate solutions with neighborhood-level impact.

The disparate health and air quality impacts borne by disadvantaged communities as a result of historical and continuing environmental injustice remain front of mind, a reality that has been underscored and exacerbated by the COVID-19 pandemic. We can begin to reverse and repair these inequitable community outcomes by providing resources to disadvantaged communities to join the vanguard of the clean energy transition. Decarbonized communities will have improved outdoor air quality (e.g., through the elimination of peaker plants and on-site combustion of fossil fuels), safer and healthier buildings (through electrification, energy efficiency and measures to guard against airborne pathogens), and substantial job opportunities and increased economic activity, collectively fostering healthy communities.



KEY CHALLENGES/BARRIERS

- Communities lack resources to adequately address the many on-the-ground challenges associated with the energy transformation—from competing interest for land use and challenging siting issues, to a diverse building stock coupled with complex and evolving building codes and aging infrastructure.
- Local resource constraints have been exacerbated by COVID-19 and the resulting sharp economic downturn.
- Certain communities have a negative perception of large-scale renewable projects, and consequently are negatively disposed to the development of such projects within those communities.
- Disadvantaged communities face disparate exposure to air pollution via multiple sources (vehicle, power plant, industrial facilities) and often are burdened with a building stock that provides unhealthy indoor environmental quality.
- Health and safety benefits that result from electrification and energy efficiency projects, and other non-energy benefits resulting from community decarbonization that improve the quality of the community's indoor and outdoor spaces, are not well understood and very difficult to quantify and monetize.

PRIORITY ACTIONS FOR NEW YORK

- Continue to provide and expand upon training and technical resources to help communities prepare for responsible renewable energy development, embrace decarbonization and energy efficiency, and support progressive building codes.
- Facilitate paths for community engagement on decarbonization wherever possible, including via grants/financial support, local coordinator support, clear technical guidance and templates, recognition, and interagency coordination.
- Incorporate decarbonization into various existing State funding programs, like the Downtown and Upstate Revitalization Initiatives and other opportunities under the Consolidated Funding Application.
- Develop and establish robust framework for host community benefit agreements via DPS, clarifying local benefits and making benefits packages more compelling.
- Via the Office of Renewable Energy Siting, issue new uniform, standardized guidelines for responsible large-scale renewable siting to improve consistency, expedite approval for non-greenfield project sites, reduce burden for local intervention, and provide foresight into future project characteristics.
- Focus on turning underutilized lands, such as brownfields, landfills, and former industrial properties, into revenue-generating clean energy projects, and advance project development on other sites that present development challenges for commercial developers.
- Facilitate passage and/or implementation of proactive community-level clean energy policies such as Community Choice Aggregation (CCA), statewide benchmarking, a carbon neutral stretch code, and other codes, standards, and mandates recommended by the Climate Action Council.



NYSDERDA KEY ACTIONS FOR 2021–2024

- Site and build renewable power and distributed clean energy projects that provide community benefits.
 - ▶ **Develop new resources** to help communities and clean energy developers collaborate to design and build successful projects, such as guidance on project economics and PILOT rates for large scale renewable energy projects, and ensuring such projects deliver tangible benefits to host communities.
 - ▶ **Encourage adoption** of distributed and large-scale clean energy resources via CCAs, increasing Consolidated Funding Application the number of CCA programs where localities use 100% renewable energy as default supply.
 - ▶ **Grow local partnerships** and leverage State and federal resources to drive investment in clean energy on brownfields or otherwise underutilized land, offering support like Just Transition site reuse planning grants.
- Build local capacity and develop programs to support community-scale decarbonization.
 - ▶ **Launch new Clean Energy Communities Leadership Round**, driving and recognizing deep climate action at the local level.
 - ▶ **Establish a local Clean Energy Hub** in each economic development region of the State to build local capacity in service of developing an inclusive clean energy economy and ensuring that disadvantaged communities benefit from this economy. Clean Energy Hubs will foster multi-disciplinary partnerships between organizations to help residents meet their energy needs, advance initiatives and solutions to address local priorities, promote clean energy programs to residents and small businesses, facilitate engagement of residents and elevate input from the community into program and policy decisions, and connect residents to workforce development opportunities.
 - ▶ **Expand clean energy training** opportunities for local officials by providing accredited, on-demand, online educational courses.
 - ▶ Building on NZEED (Community Scale) and the Clean Energy Communities Leadership Round, **develop programs that provide technical and financial assistance** for communities to adopt comprehensive plans and local legislation aimed at full decarbonization, utilizing CCAs, Downtown and Upstate Revitalization Initiatives, and other Consolidated Funding Application supported programs where applicable.
 - ▶ **Directly partner with municipalities, communities, and individual landowners** to promote neighbor-to-neighbor clean energy campaigns and testimonials, fostering the sharing of best practices by local government champions for clean energy.
 - ▶ **Partner with stakeholders and Community-Based Organizations** (CBOs) in disadvantaged communities to co-develop a local clean energy agenda to identify DER deployment strategies tailored to each community, focused on reducing operation of peaker plants (where applicable) while also creating local economic opportunities, addressing environmental injustices, advancing the State’s GHG reduction goals, and boosting disadvantaged communities capacity to lead in community-scale decarbonization.
 - ▶ **Incentivize and execute demonstration projects** consistent with the DER deployment strategies identified through such geo-targeted research studies.
 - ▶ Catalyze novel clean transportation and zero-emission vehicle/mobility deployments with prize funding **supporting clean vehicles, personal mobility, and medium- and heavy-duty transformation to benefit environmental justice communities.**
- Help communities address the dual challenges of sustainability and COVID mitigation, providing building science expertise to State counterparts and local jurisdictions in ongoing response to the COVID crisis, including energy systems support to promote clean, green schools.
- Leverage funding to drive health and energy benefits, including the Healthy Homes pilot, aimed at realizing the ability to harness health dollars and avoided health/insurance costs (private and public) to facilitate/finance electrification, energy efficiency, and clean energy upgrades.

Funding Commitments

FUNDING SOURCES

Several funding sources help NYSERDA advance the State's clean energy goals and achieve its mission. NYSERDA invests these funds in a fiscally responsible manner that maximizes benefits to New Yorkers, fills critical gaps, and addresses the needs of the market.

Clean Energy Fund

Authorized by the Public Service Commission (PSC) and derived from an assessment on retail sales of electricity by State utilities — it is comprised of four portfolios: Market Development, Innovation and Research, NY-Sun, and NY Green Bank.

Clean Energy Standard

As authorized by the PSC, these funds are realized by NYSERDA through the sale of Tier 1 Renewable Energy Credits (RECs), Offshore Wind Renewable Energy Credits (ORECs), and Zero Emission Credits (ZECs) as well as receipt of Alternative Compliance Payments from New York’s Load Serving Entities (LSEs). Through PSC orders, LSEs are obligated to meet annual compliance obligations for RECs, ORECs and ZECs. As needed, utility financial backstop collections may be called on to meet funding shortfalls. These commitments are typically paid out over a 20–25 year contract term upon delivery of RECs (for Tier 1, OSW, and future Tier 4; contract terms are shorter for Tier 2 RECs and ZECs).

Regional Greenhouse Gas Initiative (RGGI)

Derived from sale of carbon emission allowances as set forth in 6 NYCRR Part 242 and 21 NYCRR Part 507. The amount of revenues available is dependent on the variable auction prices for the allowances. Per requirements in 21 NYCRR 507, RGGI funds are used to advance energy efficiency, renewable energy, and carbon abatement projects in New York State.

Other Funds

Includes sources provided by various sponsors used for specific purposes. Public funds are leveraged considerably with private sector funding through NYSERDA programs.

ANTICIPATED COMMITMENTS (APRIL 1, 2021-MARCH 31, 2024)

INVESTMENT AREAS AND PRIORITY INITIATIVES	ESTIMATED 3-YEAR INVESTMENT LEVEL	% OF TOTAL	NYSERDA MISSION OUTCOME(S) ICONS INDICATE RELEVANCE FOR PLANNED FUNDING				
			RENEWABLES	ENERGY EFFICIENCY	EMISSIONS REDUCTIONS	CLEAN ENERGY ECONOMY	DISTRIBUTED ENERGY SYSTEM
Clean Energy Standard ^{1,2,3}	\$10,416,000,000	81.8%					
Market Development	\$1,070,000,000	8.4%					
NY Green Bank	\$675,000,000	5.3%					
NY-Sun	\$373,000,000	2.9%					
Innovation and Research	\$148,000,000	1.2%					
Energy Storage	\$45,000,000	.4%					
Total	\$12,728,000,000						

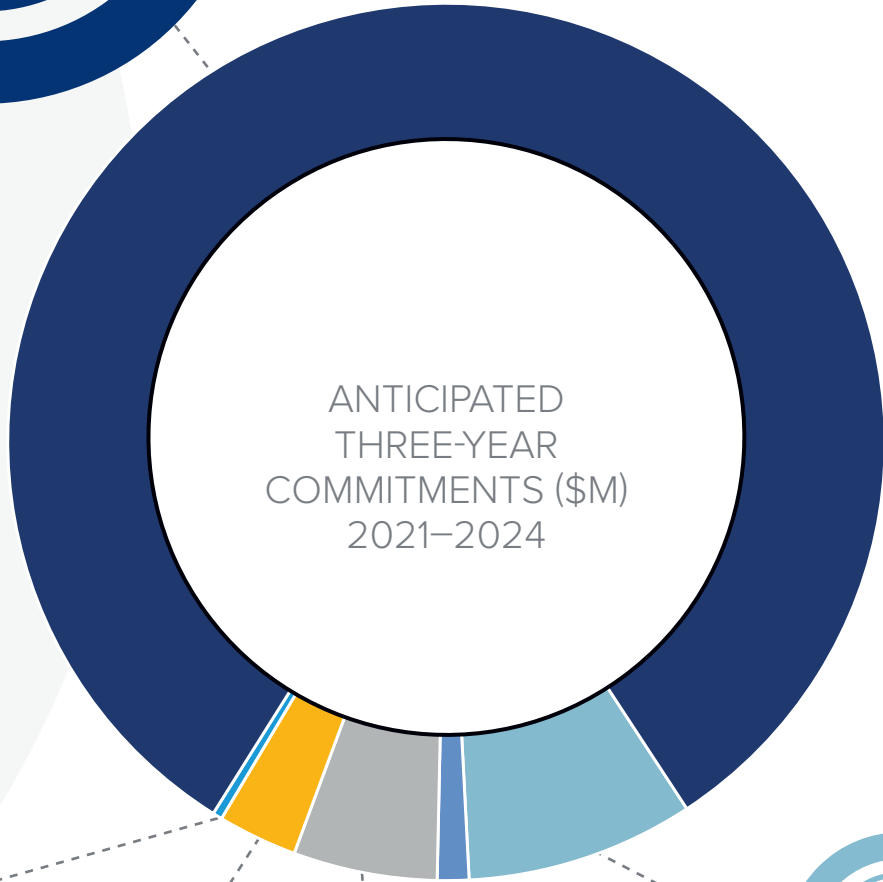
¹ Estimates of future financial commitments pertaining to Large-Scale Renewables and Offshore Wind were developed using the assumptions included in Appendix A of “White Paper on Clean Energy Standard Procurements to Implement New York’s Climate Leadership and Community Protection Act”.

² Estimates do not include the potential cost savings that could accrue from the updates to Federal renewable energy tax credits that were passed by the U.S. Congress in December 2020.

³ Financial commitments relating to potential Tier 4 procurements have not been included in this estimate. As of the publication date, the size and cost of any future Tier 4 commitments remain uncertain. The first Tier 4 Request for Proposals was recently issued in early 2021.

81.8%

Clean Energy Standard
\$10,416 M



.4%

Energy Storage
\$45 M

2.9%

NY-Sun
\$373 M

5.3%

NY Green Bank
\$675 M

1.2%

Innovation and Research
\$148 M

8.4%

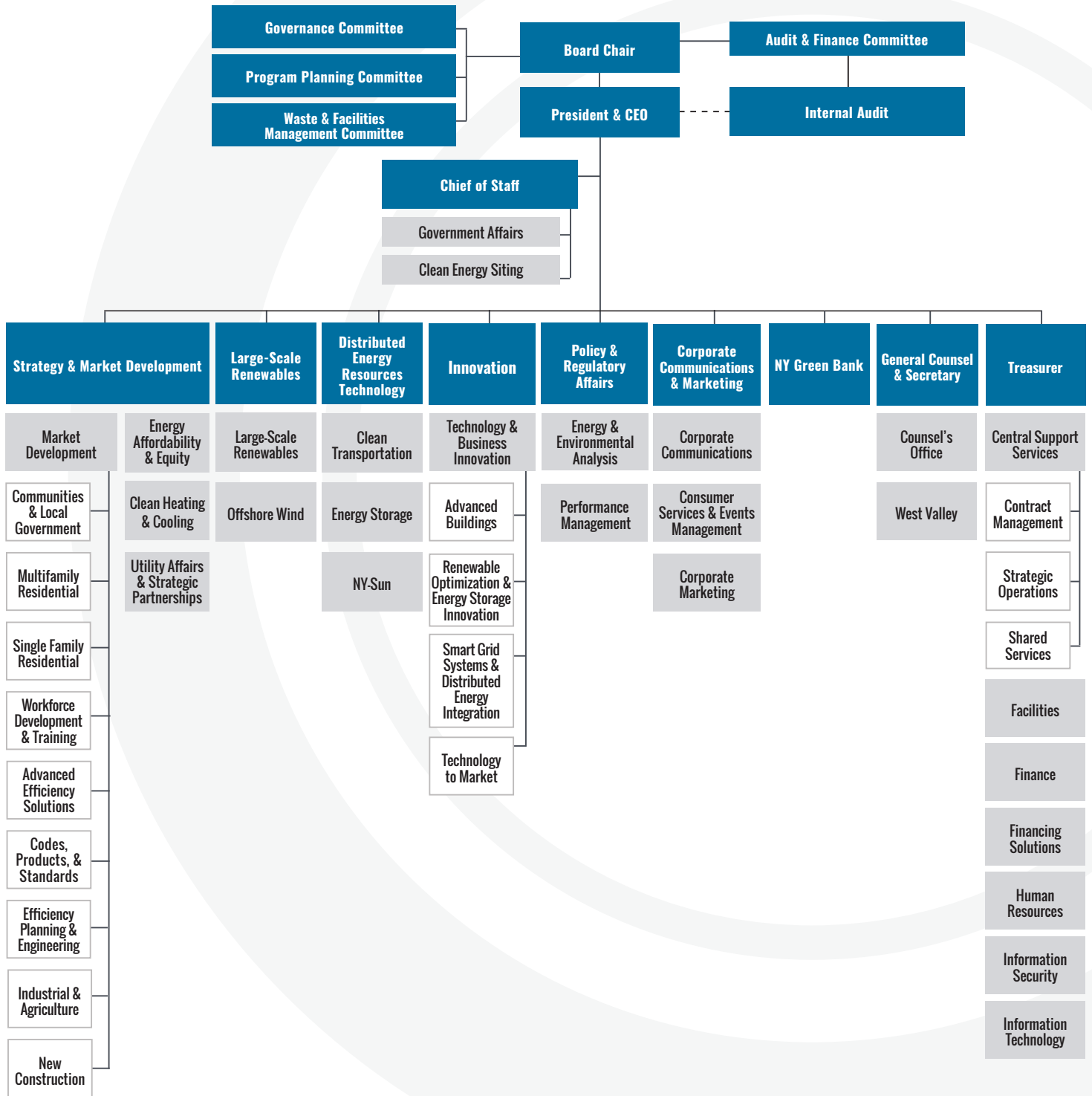
Market Development
\$1,070 M

Appendix

NYSERDA'S STRUCTURE

NYSERDA is a public benefit corporation created in 1975 under Article 8, Title 9 of the State Public Authorities Law.

NYSERDA is governed by a board consisting of 13 members, including the commissioner of the Department of Transportation, the commissioner of the New York State Department of Environmental Conservation, the chair of the New York State Public Service Commission, and the president and CEO of the New York Power Authority, who all serve ex officio. The remaining nine members are appointed by the Governor with the advice and consent of the State Senate and include, as required by statute, an engineer or research scientist, an economist, an environmentalist, a consumer advocate, an officer of a gas utility, an officer of an electric utility, and three at-large members. The board chair is designated by the Governor.



NYSERDA BOARD MEMBERS

Richard L. Kauffman

NYSERDA Chair

Sherburne B. Abbott

Vice President for Sustainability Initiatives and
University Professor of Sustainability Science and Policy, Syracuse University

Charles Bell

Programs Director, Consumers Union

Kenneth D. Daly

President, St. Thomas Aquinas College

Kate Fish

Executive Director, Adirondack North Country Association

Jay L. Koh

Managing Director and Founder, Lightsmith Group

Mark A. Willis

Senior Policy Fellow, New York University, Furman Center

Gil Quiniones

President and CEO, New York Power Authority

John B. Rhodes

Chair, New York State Public Service Commission

Basil Seggos

Commissioner, New York State Department of Environmental Conservation

Marie Therese Dominguez

Commissioner, New York State Department of Transportation

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State of New York

Andrew M. Cuomo, Governor

New York State Energy Research and Development Authority

Richard L. Kauffman, Chair | Doreen M. Harris, Acting President and CEO

Resolution No. _____

RESOLVED, that the outlook for the Authority's energy, economic environmental program priorities and strategic vision entitled *Toward a Clean Energy Future: A Strategic Outlook 2021-2024*, submitted to the Members for consideration at this meeting with such non-substantive, editorial changes and supplementary schedules as the Acting President and CEO, in her discretion, may deem necessary or appropriate, is approved as the Authority's updated Strategic Outlook.

New York's Regional Greenhouse Gas Initiative Operating Plan Amendment for 2021

Background

In New York, responsibility for implementing the Regional Greenhouse Gas Initiative (RGGI) is shared by the Department of Environmental Conservation (DEC) and the New York State Energy Research and Development Authority (NYSERDA). DEC and NYSERDA program responsibilities are contained in coordinated regulations:

- DEC established New York's CO2 Budget Trading Program and the State's share of the total regional cap through a rule (6 NYCRR Part 242) and revisions to an existing rule (6 NYCRR Part 200, General Provisions). Part 242 establishes the cap-and-trade provisions, as well as program compliance responsibilities and other program aspects.
- NYSERDA set up the CO2 Allowance Auction Program through regulations (21 NYCRR Part 507). Part 507 establishes administrative procedures for the auction process and provides that proceeds from the sale of the allowances will fund projects and programs for "energy efficiency, renewable or non-carbon emitting technologies, and innovative carbon emissions abatement technologies with significant carbon reduction potential, and for reasonable administrative costs incurred by the Authority."

The NYSERDA regulations include a provision to annually convene a group of stakeholders representing a broad array of energy and environmental interests. This group advises NYSERDA regarding strategies to best utilize RGGI funds. NYSERDA's RGGI Operating Plan is reviewed and revised on an annual basis. NYSERDA holds an open meeting of the stakeholder group each year, inviting input on how to achieve greater scale of implementation, advance activities that realize benefits in disadvantaged communities, expand private investments and partnerships, and address barriers to program success

The Draft 2020 Operating Plan Amendment was presented to stakeholders for comment in December 2019 and was approved by NYSERDA's Board in January 2020. The 2020 Operating Plan was then compiled based on the NYSERDA Board approval. Subsequently, certain adjustments were made to certain program funding allocations originally approved in the January 2020 Plan. Appendix 1 provides an analysis of the revenues and program funding allocations planned for the fiscal years ending March 31, 2020 as compared to actual/projected results.

This document represents the 2021 Operating Plan Amendment and provides program descriptions and funding levels for the April 2021-March 2024 timeframe.

Review of Programs and Budgets for the 2021 Operating Plan

New York State invests RGGI proceeds to support comprehensive strategies that best achieve the RGGI greenhouse gas emissions reduction goals, through energy efficiency, renewable energy, and carbon abatement strategies, pursuant to 21 NYCRR Part 507. The programs in the portfolio of initiatives are designed to support the pursuit of the State's greenhouse gas emissions reduction goals by:

- Deploying commercially available energy efficiency and renewable energy technologies;
- Building the State's capacity for long-term carbon reduction;
- Empowering New York communities to reduce carbon pollution, and transition to cleaner energy;
- Stimulating entrepreneurship and growth of clean energy and carbon abatement companies in New York; and

- Creating innovative financing to increase adoption of clean energy and carbon abatement in the State.

The initiatives described below represent program activity proposed for the 2021 Operating Plan. The 2021 Operating Plan portfolio builds on the 2020 portfolio, with an increasing focus on disadvantaged communities. The funding level for each program previously approved and the amounts planned for FY21-22 through FY23-24 are reflected in Table 1 below.

RGGI programs have and will continue, alongside other state programs, to contribute to economy-wide greenhouse gas emissions reductions and provide benefits to New York's historically overburdened and underserved communities. NYSERDA's CO₂ Allowance Auction Program regulations reflect the provision of the Climate Leadership and Community Protection Act "that 40%, and no less than 35%, of the overall benefits from the investment of the [CO₂ Allowance Auctions] proceeds" will be realized in disadvantaged communities. Appendix 2 of this Operating Plan amendment provides an indication of how RGGI program commitments through 2019 are anticipated to result in benefits for disadvantaged communities based on an interim definition of disadvantaged communities, as the Climate Justice Working Group continues its work to arrive at a long-term definition. Appendix 2 also provides an estimate of how RGGI commitments post-2019 will benefit disadvantaged communities. NYSERDA's annual budget process will examine the allocation of projected funds expected to advance this goal. NYSERDA estimates that 39% of post-2019 commitments are expected to provide benefits to disadvantaged communities, an increase from the estimate of 23% of pre-2020 portfolio commitments.

The funding allocation values represented in Table 1 provide an estimate of when funds will be assigned to each program. These figures do not reflect when funds will be spent or when contracts will be signed. The table also reflects cumulative funding allocations through FY19-20, original and revised funding allocations for FY20-21, and forecasted allocations for FY21-22 through FY23-24.

Multi-year programs that have remaining funds available for program expenditures but are not receiving additional funding under this Plan Amendment are not described below. Those programs will continue with the planned expenditure of their previously allocated funding as outlined in the 2020 RGGI Operating Plan.

For all RGGI-funded activities, NYSERDA will provide timely progress reports utilizing best practice protocols for project tracking and evaluation.

Program Descriptions

[NYPA NY-Sun Customer Incentives](#)

The NY-Sun and NYSERDA Solar Electric initiatives are driving the growth of the solar industry and making solar more affordable for all New Yorkers. The program provides declining incentives for the installation of systems and works to reduce solar project costs. RGGI funding will enable customers of the New York Power Authority (NYPA) and municipal power companies to participate in NY-Sun. The Operating Plan Amendment proposes to provide \$6 million in funding during FY20-21, \$3 million during FY21-22, and \$1 million during FY22-23.

[ChargeNY](#)

ChargeNY has been pursuing three strategies to promote plug-in electric vehicle (PEV) adoption by consumers across New York. First, NYSERDA implemented the Drive Clean rebate program for PEVs in March 2017, accelerating

purchases of PEVs by reducing higher upfront costs. Second, NYSERDA will continue to invest in marketing and awareness-building activities to build interest in PEVs among the general public. A focus on building greater public knowledge and awareness of the capabilities of PEVs is essential to spur more private investment in PEV purchases and PEV charging stations. This work may also include other market development activities, such as policy and business model development studies that support new ways for critical stakeholders, such as utilities, local governments, and car dealers, to get involved in the PEV market. Third, NYSERDA will also support the installation of PEV charging stations at workplaces, municipal lots, and multi-family buildings – location types that have been seen to be effective drivers for PEV adoption based on usage data reported from previous installations. Regions of the State that have seen faster PEV adoption will be identified for additional charging station support, which ensures investments in infrastructure support areas with the greatest potential for additional PEV drivers. ChargeNY will also initiate the deployment of a network of direct current (DC) fast charging stations across the State. This Operating Plan amendment proposes to provide additional funding of \$21.5 million in FY21-22, \$16.3 million in FY22-23, and \$15 million in FY23-24 to support continuation of current and additional ChargeNY strategies to ensure effective engagement with the market to build scale and ensure a focus on a just transition into future years.

LIPA Energy Efficiency and Renewable Energy

These funds enhance the portfolio of clean energy activities for energy consumers on Long Island, as approved by the Long Island Power Authority (LIPA) and administered by PSEG-Long Island. Funding and reporting requirements are established through a Memorandum of Understanding between NYSERDA and LIPA, which ensure that RGGI funds meet the requirements of the RGGI regulations that funds are used to support energy efficiency and clean energy activities, as well as advancing the goal of benefits of investments in disadvantaged communities. For this 3-year budget proposal, this operating plan amendment proposes to repurpose \$40 million in previously approved funds for energy storage projects on Long Island. LIPA has agreed to procure 200 megawatts of bulk storage or non-wires alternatives storage, allowing funds originally allocated for storage incentives on Long Island to be repurposed to support continuation of funding for LIPA’s energy efficiency program. NYSERDA is working with LIPA to maintain the level of market activity designed with the previous RGGI allocations. With this funding re-allocation, as well as additional funds, the Operating Plan is proposed to maintain support for LIPA-implemented energy efficiency and clean energy activity in the amount of \$20 million each year for the calendar years 2021-2023. The LIPA Board of Trustees approves an annual energy efficiency program plan, which details the activities that these funds will support.

Assisted Home Performance with ENERGY STAR

To maintain statewide access to fuel neutral, whole buildings energy efficiency opportunities, these funds will maintain support for moderate-income customers of municipal utilities (which cannot be funded through the Clean Energy Fund) to access Assisted Home Performance with ENERGY STAR as a comprehensive energy efficiency services program for existing one-to-four family homes. RGGI funding will allow the program to target customers using oil and propane for space and domestic water heating purposes. The funds will offset part of the cost for consumers to replace inefficient oil and propane heating equipment and other measures that have a direct impact on reducing oil and propane consumption (e.g., insulation, air sealing). The annual contribution proposed for FY21-22 through FY23-24 is based on current annual incentives offered for municipal utility customers.

EmPower

Similar to Assisted Home Performance with ENERGY STAR, funds to support EmPower New York, which provides energy efficiency services for low-income New Yorkers, are targeted to customers of municipal utilities heating with oil, propane, kerosene, wood or coal, but may also be applied to homes heating with natural gas, and which are also targeted to customers of municipal utilities. Measures supported by EmPower include insulation, air sealing, and heating system upgrades. The annual contribution proposed for FY21-22 through FY23-24 is based on current annual incentives offered for municipal utility customers.

Pilot Projects with Municipal Utilities

The Amendment proposes an allocation of \$1M annually over the three-year plan to develop partnerships with municipal utilities and/or rural cooperatives for innovative approaches to energy efficiency or clean energy investments that will both advance the realization of the CLCPA renewable and zero-emission electricity system goals for these systems, as well as provide insights for technology applications or clean energy market approaches that can be applied in service territories across the State. NYSERDA will work with the municipal utilities as well as other state energy agencies and authorities on valuable projects, which may include activities for low- and moderate-income energy efficiency, renewable energy integration into existing systems, battery storage applications, and other demonstrations that may help leverage funding from third-party sources and which will advance deep decarbonization for the utility systems and the state generally.

Disadvantaged Communities Schools and Buildings

The Amendment proposes an allocation of \$37.4M over the three-year plan to invest in low-carbon solutions for schools, public housing, and other buildings located within and serving disadvantaged communities. This work would build upon NYSERDA preK-12 program to provide both professional resources needed for planning and funding of demonstrations to create a model for decarbonization of schools. In addition to providing financial support for green/clean schools, the initiative would support curriculum development, workforce training, and assessments of improvements of indoor air quality associated with the building upgrades – providing a broad range of benefits to families and communities. This initiative would also fund pilots of electrification and other low-carbon solutions in affordable and public housing to drive future capital investment in proven decarbonization solutions.

Clean Energy Communities

An allocation of \$3 million annually for FY21-22 through FY23-24 will be used to support the Clean Energy Communities Leadership Round, an update to the original Clean Energy Communities program. The Leadership Round is designed to augment the overall initiative by seeking community engagement in activities that are more impactful, innovative, and sustainable over time, and provide a model of other communities in the program or for communities entering the program. In the Leadership Round, communities continue to work with regional coordinators to prioritize and implement high-impact actions, such as adoption of stretch building codes and community choice aggregation, as well as earn new forms of recognition. Allocations from this program will be applied to drive activities across the state, including for those municipalities that do not pay into the system benefits charge.

Community and Stakeholder Engagement

NYSERDA will seek to building local capacity and improve stakeholder engagement through this Amendment, which proposes \$1 million in annual funding from FY21-22 through FY23-24 to increase engagement of residents and communities, support the participation of community-based and advocacy organizations in stakeholder meetings, and supporting local projects. In 2021, NYSERDA will launch a network of Community Energy Hubs, which will build on the success of the Community Energy Engagement Program, wherein community and locally-based organizations across New York State provided outreach and education services to help low-income residents and small businesses make informed energy choices and access incentives and other resources to implement clean energy projects. The Hubs will be designed to enhance community-level engagement and capacity building by supporting clean energy concierge services. These services will be provided to residents, small businesses, nonprofits and multifamily building owners in disadvantaged and underserved communities to increase awareness and adoption of clean energy programs and solutions, with the focus of creating a more inclusive clean energy economy.

In addition, NYSERDA will help to increase the capacity of organizations to advance clean energy projects at the local level. NYSERDA will advance a pilot effort to increase the potential for community-based organizations to plan for and develop community-scale clean energy projects that can benefit disadvantaged communities with capacity development grants. Funds allocated in this operating plan will allow for statewide activities alongside efforts supported through the Clean Energy Fund.

NYSERDA will also seek to improve the ability for community-based organizations to actively participate in stakeholder engagement and process. Many local organizations often lack the resources and capacity to effectively engage on policy and initiative development, often excluding perspectives from their communities and constituents from the planning process. To ensure that community-based organizations have the resources to engage in stakeholder meetings and public comment processes, NYSERDA will allocate resources to provide stipends to offset the cost of participation as part of a pilot initiative to identify solutions for improving and increasing stakeholder engagement.

Renewable/Net Zero Energy Demonstrations

The statewide Net Zero Energy for Economic Development initiative was launched in 2019. The initiative is supporting new construction or renovation work on existing buildings that is designed to achieve net zero energy or net zero carbon performance. Eligible building types include commercial, industrial, institutional and mixed-use facilities, and project awards are also based on the ability of the project to advance the goals of the local Regional Economic Development Council Strategic Plan or State Priority Issue Area. The RGGI funds are designed to support at least one project in Long Island and is offered alongside support from the Clean Energy Fund, available for projects located in the rest of the State. This Operating Plan Amendment assumes a continued \$1 million contribution in each of the three years of the 2021 Operating Plan.

Priority Population Workforce Development

The proposed allocation of \$11 million over the three-year plan to expand access to NYSERDA's On-the-Job Training program, which provides wage subsidies to businesses that hire new workers, high efficiency HVAC and electrification career pathways training to prepare new workers for jobs, and support new initiatives to test the Pay for Success model for workforce training-outcomes, and fund fellowship positions for organizations serving disadvantaged communities. All activities will have a focus on priority populations and disadvantaged communities.

Clean Energy Fund

Through the Clean Energy Fund (CEF) and its portfolios, NYSERDA is advancing the goals of the Climate Leadership and Community Protection Act (CLCPA). As approved by the Commission, the CEF delivers on its primary goals to reduce greenhouse gas emissions, increase renewable energy generation, increase energy efficiency, and attract greater private investment in clean energy, with investment portfolios that are designed to achieve scale in clean energy markets. These key CEF objectives dovetail with the RGGI investment parameters, creating a unique opportunity to leverage CEF and RGGI funds to help achieve New York's broader CLCPA and clean energy objectives. In designing the CEF, NYSERDA originally planned to dedicate \$250 million in RGGI funds to the CEF portfolio over 10 years, supporting the \$3.42 billion Market Development and Innovation and Research activities. In designing the CEF, NYSERDA originally planned to dedicate \$250 million in RGGI funds to the CEF portfolio over 10 years, supporting the \$3.42 billion Market Development and Innovation and Research activities.

The 2020 Operating Plan advanced a plan to restore funds supporting the CEF portfolio, while also realizing annual balanced budgets. In keeping with this plan, while accounting for new revenue and commitment projections, NYSERDA will allocate to the CEF \$33.64 million in FY21-22 and \$24.11 million in FY22-23, bringing the aggregate amount committed to the CEF in line with the original schedule to dedicate \$25 million annually, and allocating \$25 million for FY23-24. Should revenues continue according to current projections, continued contributions to the CEF in future years (through 2025) will be maintained at \$25 million per year.

Green Jobs-Green New York

The Green Jobs-Green New York (GJGNY) Program, created under the Green Jobs-Green New York Act of 2009, provides New Yorkers with access to energy assessments, installation services, low interest financing, and pathways to training for various green-collar careers. The GJGNY program was originally funded with \$112 million of RGGI funds, of which \$26 million was allocated to a residential revolving loan fund to provide low interest financing for residential energy efficiency improvements, residential solar photovoltaic (PV) systems (effective April 2014), solar thermal systems, and high efficiency pellet stove heating systems through NYSERDA's Renewable Heat NY program. Interest rate changes reviewed with the GJGNY Advisory Council and effectuated in September 2016 are resulting in a reduced level of RGGI funds required to support the financing and refinancing of GJGNY loans and ensuring that RGGI funds are directed towards providing GJGNY loans to low-to-moderate income consumers and consumers who may lack access to traditional financing sources.

In June of 2020, NYSERDA launched a 0% financing loan initiative available for up to 12 months or until \$20 million in loans were approved. Demand far exceeded estimates after only 15 days. Most of these loans will be issued in FY20-21 and funded from the revolving loan fund (resulting in an increase in the funding allocation required for the program for FY20-21), with bond proceeds reimbursing funding beginning in FY21-22. The Plan includes funding totaling approximately \$48 million from FY21-22 through FY23-24 (an average of approximately \$16 million per year) for continuation of GJGNY residential financing, including making 3.49% 15-year unsecured financing available to consumers living in federal census block groups where more than 50 percent of households have household income less than 120% of area median income (and allowing consumers living outside of these communities to qualify for this rate if they meet this income threshold), and also offering access to financing for consumers who may not qualify for traditional unsecured loan underwriting criteria and meet NYSERDA's "Tier 2" underwriting criteria.

Transfer to State – Clean Energy Tax Credits

The New York State Budget for FY20-21 directed NYSERDA to transfer \$23 million in RGGI funds to the State General Fund to support clean energy tax credits. For the purpose of developing this proposed Operating Plan Amendment, NYSERDA assumes that the annual State Budget for FY21-22 through FY23-24 will include similar directives and has therefore allocated \$69 million in funding for such transfers for FY21-22 through FY23-24.

Transfer to State – Environmental Protection Fund

The New York State Budget for FY20-2021 directed NYSERDA to transfer \$5 million in RGGI funds to the Environmental Protection Fund (EPF). This operating plan assumes annual funding to support EPF programs that advance New York’s leadership in reducing greenhouse gas emissions such as Climate Smart Communities, Smart Growth, and Greenhouse Gas Management.

Anticipated Future Funding Allocations

The projected revenues and program funding allocations are presented below in Table 1. Additionally, the table presents program administration and evaluation costs, ongoing RGGI, Inc. costs, State Cost Recovery Fees, and other factors. The table below presents an increase in program administration funding, and which reflect the projected increased need to support additional activities anticipated due to new program activity. As noted, program funding allocations are equal to projected revenues on an annual basis.

Funding Assumptions

The Operating Plan for FY20-21 through FY22-23 assumes future auction revenues of \$6.82 based on the results of the most recent RGGI auction in September 2020. NYSERDA proposes to base the future revenue prices on the September auction price, rather than the December price (\$7.41), to be conservative and in the event the December auction price is not sustained over the planning period (considerably higher than the Emissions Containment Reserve price)

Table 1: Revenues and Program Funding Allocations

Category	Program	Cumulative	FY20-21	FY20-21				Total
		FY19-20	Original Plan	Revised	FY21-22	FY22-23	FY23-24	
Proceeds	Number of allowances	392,188,425	20,087,261	20,308,920	21,874,920	20,993,401	19,447,553	474,813,218
	Allowance price	\$3.33	\$5.20	\$6.70	\$6.82	\$6.82	\$6.82	\$3.93
	RGGI Auction Proceeds	1,306,349,512	104,453,755	136,141,216	149,186,951	143,174,997	132,632,308	1,867,484,984
	Interest Earnings	17,921,696	2,195,000	199,000	101,000	73,000	52,000	18,346,696
	Total Revenues	1,324,271,208	106,648,755	136,340,216	149,287,951	143,247,997	132,684,308	1,885,831,680
Renewable Energy	NY SUN NYPA Customer Incentives	20,000,000	-	6,000,000	3,000,000	1,000,000	-	30,000,000
	NY SUN Community Solar/K-solar	7,500,000	-	-	-	-	-	7,500,000
	NY SUN Long Island incentives	55,000,000	-	-	-	-	-	55,000,000
	Renewable Heat NY	10,300,083	-	-	-	-	-	10,300,083
	Advanced Renewable Energy	2,837,698	-	-	-	-	-	2,837,698
	NYS Generation Attributes Tracking System	789,933	-	-	-	-	-	789,933
	NYSDERDA PV incentives	5,319,821	-	-	-	-	-	5,319,821
Energy Efficiency	Clean Energy Workforce Opportunity Program	15,000,000	-	-	-	-	-	15,000,000
	LIPA Efficiency and RE	204,600,000	25,000,000	25,000,000	20,000,000	20,000,000	20,000,000	289,600,000
	Energy Storage (LIPA territory)	52,926,434	-	(40,000,000)	-	-	-	12,926,434
	EmPower NY	27,955,148	200,000	300,000	300,000	300,000	300,000	29,155,148
	Assisted Home Performance with Energy Star	25,520,757	300,000	200,000	200,000	200,000	200,000	26,320,757
	Pilot Projects with Municipal Utilities	-	-	-	1,000,000	1,000,000	1,000,000	3,000,000
	Disadvantaged Communities Schools/Buildings	-	-	-	13,000,000	8,600,000	15,800,000	37,400,000
	Multifamily Performance Program	15,162,316	-	(115,633)	-	-	-	15,046,683
	Multifamily Carbon Emissions Reduction	5,833,019	-	-	-	-	-	5,833,019
	Solar Thermal incentive	4,342,677	-	(115,730)	-	-	-	4,226,947
	Municipal Water/Wastewater	1,245,242	-	-	-	-	-	1,245,242
	Green Residential Buildings	2,744,601	-	-	-	-	-	2,744,601
Innovative GHG Abatement Strategies	Southern Tier Competition (76 West)	11,000,000	-	-	-	-	-	11,000,000
	Brookhaven National Lab- ION Collidor	25,000,000	-	-	-	-	-	25,000,000
	Electric Vehicle/Charge NY	23,500,000	-	-	21,500,000	16,300,000	15,000,000	76,300,000
	Advanced Buildings & Industrial Innovations	14,616,038	-	(1,308,384)	-	-	-	13,307,654
	Climate Research & Analysis	8,729,380	-	(84)	-	-	-	8,729,296
	Competitive GHG Reduction Pilot	1,013,533	-	(40,883)	-	-	-	972,650
	Clean Energy Business Development	5,809,987	-	-	-	-	-	5,809,987
	Transportation Research	3,819,311	-	-	-	-	-	3,819,311
	PV Manufacturing consortium	8,500,000	-	(20,000)	-	-	-	8,480,000
	Carbon Sequestration	1,000,000	-	-	-	-	-	1,000,000
Community Clean Energy	Cleaner Greener Communities	94,261,895	-	-	-	-	-	94,261,895
	Clean Energy Communities	4,273,120	-	-	3,000,000	3,000,000	3,000,000	13,273,120
	Climate Smart Communities	7,674,999	-	-	-	-	-	7,674,999
	Community Energy Engagement	1,400,000	-	-	1,000,000	1,000,000	1,000,000	4,400,000
	Economic Development Growth Extension	5,843,047	-	-	-	-	-	5,843,047
	Energy to Lead	3,000,000	-	-	-	-	-	3,000,000
	Renewable/Net-Zero Energy Demonstrations	6,000,000	1,000,000	-	1,000,000	1,000,000	1,000,000	9,000,000
	Priority Population Workforce Development	-	-	-	2,000,000	2,000,000	7,000,000	11,000,000
	Regional Economic Development & GHG Reduction	10,289,945	-	(43,502)	-	-	-	10,246,443
CEF	Transfer to(from) Clean Energy Fund	73,790,932	16,477,887	52,338,026	33,789,264	21,331,778	25,000,000	206,250,000
Directed	NYS Environmental Tax Credits	133,000,000	23,000,000	23,000,000	23,000,000	23,000,000	23,000,000	225,000,000
	NYS Environmental Protection Fund	-	-	5,000,000	5,000,000	5,000,000	5,000,000	20,000,000
	Electric Generation Facility Cessation Mitigation/ Just Transition	30,000,000	20,000,000	20,000,000	-	-	-	50,000,000
	Green Jobs-Green NY- Original Legislation	112,000,000	-	-	-	-	-	112,000,000
	Green Jobs-Green NY- Additional Funding	105,025,275	12,000,000	37,700,000	12,000,000	18,500,000	17,518,656	190,743,931
	Transfer to Clean Energy Standard	719,424	-	-	-	-	-	719,424
	NYS Budget Transfer	90,000,000	-	-	-	-	-	90,000,000
Administration and Other Non-Program Costs	Program Administration	33,096,359	6,500,000	6,500,000	7,500,000	7,500,000	7,500,000	62,096,359
	Program Evaluation	9,155,429	-	-	-	-	-	9,155,429
	Commensurate Benefit/Litigation reserve	21,900,366	-	-	-	-	-	21,900,366
	RGGI Inc Startup Costs	1,598,204	-	-	-	-	-	1,598,204
	RGGI Inc pro-rata costs	8,358,667	1,000,000	825,000	825,000	825,000	825,000	11,658,667
	State Cost Recovery	12,817,568	1,170,868	1,121,406	1,173,687	1,101,203	1,130,668	17,344,532
	Total Funding Allocations	1,324,271,208	106,648,755	136,340,216	149,287,951	131,657,981	144,274,324	1,885,831,680
Surplus/(Shortfall)	-	-	-	-	11,590,016	(11,590,016)	-	
Cumulative Surplus(Shortfall)	-	-	-	-	11,590,016	0	-	

Note: *Totals may not sum exactly due to rounding. Fiscal years begin on April 1st and end on March 31st.

Table 2: RGGI Cash Flow

Category		Cumulative 3/31/20	FY20-21	FY21-22	FY22-23	FY23-24	Thereafter
Proceeds	Number of allowances	392,188,425	20,308,920	21,874,920	20,993,401	19,447,553	
	Allowance price	\$3.33	\$6.70	\$6.82	\$6.82	\$6.82	
	RGGI Auction Proceeds	1,306,349,512	136,141,216	149,186,951	143,174,997	132,632,308	
	Interest Earnings	17,921,697	199,000	101,000	73,000	52,000	
	Total Revenues	1,324,271,208	136,340,216	149,287,951	143,247,997	132,684,308	
Renewable Energy	NY SUN NYPA Customer Incentives	3,572,351	100,000	3,000,000	8,000,000	13,000,000	2,327,649
	NY SUN Community Solar/K-solar	1,005,741	1,082,377	1,082,377	1,082,377	1,082,377	2,164,751
	NY SUN Long Island incentives	46,784,073	2,745,754	2,735,086	2,735,087	-	-
	Renewable Heat NY	9,089,270	670,222	540,591	-	-	-
	Advanced Renewable Energy	2,837,698	-	-	-	-	-
	NYS Generation Attributes Tracking System	185,973	201,320	201,320	201,320	-	-
	NYSERDA PV incentives	5,288,571	31,250	-	-	-	-
Energy Efficiency	Clean Energy Workforce Opportunity Program	15,000,000	-	-	-	-	-
	LIPA Efficiency and RE	204,600,000	25,000,000	20,000,000	20,000,000	20,000,000	-
	Energy Storage (LIPA territory)	108,500	2,000,000	10,000,000	817,934	-	-
	EmPower NY	27,814,813	300,000	300,000	300,000	440,335	-
	Assisted Home Performance with Energy Star	25,092,507	200,000	200,000	200,000	628,250	-
	Pilot Projects with Municipal Utilities			1,000,000	1,000,000	1,000,000	-
	Disadvantaged Communities Schools/Buildings			1,300,000	12,745,000	8,109,000	-
	Multifamily Performance Program	14,583,931	300,000	162,752	-	-	-
	Multifamily Carbon Emissions Reduction	5,833,019	-	-	-	-	-
	Solar Thermal incentive	4,226,947	-	-	-	-	-
	Municipal Water/Wastewater	1,245,242	-	-	-	-	-
	Green Residential Buildings	2,744,601	-	-	-	-	-
Innovative GHG Abatement Strategies	Southern Tier Competition (76 West)	9,106,257	1,500,000	393,743	-	-	-
	Brookhaven National Lab- ION Collider	25,000,000	-	-	-	-	-
	Electric Vehicle/Charge NY	11,421,245	22,000,000	22,878,755	16,300,000	3,700,000	-
	Advanced Buildings & Industrial Innovations	10,829,772	1,962,189	515,693	-	-	-
	Climate Research & Analysis	8,289,128	440,168	-	-	-	-
	Competitive GHG Reduction Pilot	972,650	-	-	-	-	-
	Clean Energy Business Development	5,596,227	213,760	-	-	-	-
	Transportation Research	3,766,908	52,403	-	-	-	-
	PV Manufacturing consortium	8,480,000	-	-	-	-	-
Carbon Sequestration	1,000,000	-	-	-	-	-	
Community Clean Energy	Cleaner Greener Communities	69,024,957	12,196,712	8,198,634	4,263,290	578,302	-
	Clean Energy Communities	984,962	332,878	3,332,878	3,899,545	3,899,545	823,313
	Climate Smart Communities	4,983,020	538,395	538,395	538,395	538,395	538,399
	Community Energy Engagement	324,092	671,876	1,404,032	1,000,000	1,000,000	-
	Economic Development Growth Extension	5,562,723	-	280,324	-	-	-
	Energy to Lead	1,796,977	300,000	300,000	300,000	303,023	-
	Renewable/Net-Zero Energy Demonstrations	3,000,000	4,000,000	-	1,000,000	1,000,000	-
	Priority Population Workforce Development			2,000,000	2,000,000	7,000,000	-
Regional Economic Development & GHG Reduction	9,763,011	483,432	-	-	-	-	
Clean Energy Fund	Transfer to Clean Energy Fund	73,790,932	52,338,026	33,789,264	21,331,778	25,000,000	-
	Transfer to NY Green Bank	-	-	-	-	-	-
Directed	NYS Environmental Tax Credits	133,000,000	23,000,000	23,000,000	23,000,000	23,000,000	-
	NYS Environmental Protection Fund	-	5,000,000	5,000,000	5,000,000	5,000,000	-
	Electric Generation Facility Cessation Mitigation	30,000,000	16,666,667	1,666,667	1,666,666	-	-
	Green Jobs-Green NY- Original Legislation	112,000,000	-	-	-	-	-
	Green Jobs-Green NY- Additional Funding	105,025,275	37,700,000	12,000,000	18,500,000	17,518,656	-
	Transfer to Clean Energy Standard	719,424	-	-	-	-	-
	NYS Budget Transfer	90,000,000	-	-	-	-	-
NYS Temporary Budget Transfer	5,679,455	(3,786,304)	(1,262,101)	(631,050)	-	-	
Administration and Other Non-Program Costs	Program Administration	33,076,133	6,520,226	7,500,000	7,500,000	7,500,000	-
	Program Evaluation	5,967,402	1,594,014	1,594,013	-	-	-
	Commensurate Benefit/Litigation reserve	21,900,366	-	-	-	-	-
	RGGI Inc Startup Costs	1,598,204	-	-	-	-	-
	RGGI Inc pro-rata costs	8,358,667	825,000	825,000	825,000	825,000	-
	State Cost Recovery	12,756,080.00	1,121,406	1,173,687	1,101,203	917,855	274,301
Total Expenses	1,183,787,104	218,301,771	165,651,110	154,676,545	142,040,738	318,091,696	
Cash Increase/(Decrease)	140,484,104	(81,961,555)	(16,363,159)	(11,428,548)	(9,356,430)	(42,159,391)	
Cash Balance	140,484,104	58,522,550	42,159,391	30,730,843	21,374,413	-	

Note: *Totals may not sum exactly due to rounding. Fiscal years begin on April 1st and end on March 31st

Appendix 1
January 2020 Operating Plan Revenues and Program Funding Allocations Compared to Actuals/Projections

Category	Program	FY19-20 Budget (rev Jun2019)	FY19-20 Actual
Proceeds	Number of allowances	20,298,765	20,298,765
	Allowance price	\$5.62	\$5.52
	RGGI Auction Proceeds	114,079,059	112,023,819
	Interest Earnings	2,779,000	2,756,894
	Total Revenues	116,858,059	114,780,713
Renewable Energy	NY SUN NYPA Customer Incentives	-	-
	NY SUN Community Solar/K-solar	-	-
	NY SUN Long Island incentives	-	-
	Renewable Heat NY	-	-
	Advanced Renewable Energy	-	-
	NYS Generation Attributes Tracking System	-	-
Energy Efficiency	NYSERDA PV incentives	-	-
	Clean Energy Workforce Opportunity Program	-	-
	LIPA Efficiency and RE	25,000,000	25,000,000
	Energy Storage (LIPA territory)	52,926,434	52,926,434
	EmPower NY	200,000	200,000
	Assisted Home Performance with Energy Star	300,000	300,000
	Pilot Projects with Municipal Utilities	-	-
	Disadvantaged Communities Schools/Buildings	-	-
	Multifamily Performance Program	(51,174)	(51,174)
	Multifamily Carbon Emissions Reduction	(2)	(2)
Innovative GHG Abatement Strategies	Solar Thermal incentive	-	-
	Municipal Water/Wastewater	-	-
	Green Residential Buildings	-	-
	Southern Tier Competition (76 West)	-	-
	Brookhaven National Lab- ION Collidor	-	-
	Electric Vehicle/Charge NY	5,000,000	-
	Advanced Buildings & Industrial Innovations	(198)	(198)
	Climate Research & Analysis	(6,533)	(6,533)
	Competitive GHG Reduction Pilot	-	-
Clean Energy Business Development	-	-	
Community Clean Energy	Transportation Research	(15,050)	(15,050)
	PV Manufacturing consortium	-	-
	Carbon Sequestration	-	-
	Cleaner Greener Communities	(1,132,660)	(4,420,042)
	Clean Energy Communities	-	1,700,000
	Climate Smart Communities	-	-
	Community Energy Engagement	-	-
	Economic Development Growth Extension	-	-
Energy to Lead	-	-	
CEF	Renewable/Net-Zero Energy Demonstrations	4,000,000	6,000,000
	Priority Population Workforce Development	-	-
Directed	Regional Economic Development & GHG Reduction	-	-
	Transfer to(from) Clean Energy Fund	4,454,010	17,509,699
	NYS Environmental Tax Credits	23,000,000	23,000,000
	NYS Environmental Protection Fund	-	-
	Electric Generation Facility Cessation Mitigation/Just Transition	-	-
	Green Jobs-Green NY- Original Legislation	-	-
	Green Jobs-Green NY- Additional Funding	12,400,000	10,400,000
Administration and Other Non-Program Costs	Transfer to Clean Energy Standard	-	-
	NYS Budget Transfer	-	-
	Program Administration	2,232,436	2,232,436
	Program Evaluation	-	-
	Commensurate Benefit/Litigation reserve	-	-
	RGGI Inc Startup Costs	-	-
Total Funding Allocations	RGGI Inc pro-rata costs	829,257	441,876
	State Cost Recovery	1,035,371	877,100
	Total Funding Allocations	77,245,457	83,168,112
	Surplus/(Shortfall)	39,612,602	31,612,602
Cumulative Surplus(Shortfall)	8,000,000	-	

Appendix 2 RGGI Commitments Benefiting Disadvantaged Communities

Category	Program	Estimated LMI/ Disadvantaged Community			SUBJECT TO CLCPA Estimated LMI/ Disadvantaged Community			Total	
		Cumulative Commitments 12/31/19	Benefit	%	Post-2019 Commitments	Benefit	%		
SUBJECT TO CLCPA	Renewable Energy	NY SUN NYPA Customer Incentives	9,706,046	3,397,116	35%	20,293,954	7,102,884	35%	30,000,000
		NY SUN Community Solar/K-solar	1,249,272	-	0%	6,250,728	-	0%	7,500,000
		NY SUN Long Island incentives	51,200,565	-	0%	3,799,435	-	0%	55,000,000
		Renewable Heat NY	9,634,826	-	0%	665,257	-	0%	10,300,083
		Advanced Renewable Energy	2,837,698	-	0%	-	-	0%	2,837,698
		NYS Generation Attributes Tracking System	789,933	-	0%	-	-	0%	789,933
		NYSERDA PV incentives	5,319,821	-	0%	-	-	0%	5,319,821
	Energy Efficiency	Clean Energy Workforce Opportunity Program	15,000,000	-	0%	-	-	0%	15,000,000
		LIPA Efficiency and RE	204,600,000	61,380,000	30%	85,000,000	25,500,000	30%	289,600,000
		Energy Storage	301,575	-	0%	12,624,859	-	0%	12,926,434
		EmPower NY	27,783,474	27,783,474	100%	1,371,674	1,371,674	100%	29,155,148
		Assisted Home Performance with Energy Star	25,074,497	25,074,497	100%	1,246,260	1,246,260	100%	26,320,757
		Pilot Projects with Municipal Utilities	-	-	-	3,000,000	1,050,000	35%	3,000,000
		Disadvantaged Communities Schools/Buildings	-	-	-	37,400,000	37,400,000	100%	37,400,000
		Multifamily Performance Program	15,046,683	-	0%	-	-	0%	15,046,683
		Multifamily Carbon Emissions Reduction	5,833,019	-	0%	-	-	0%	5,833,019
		Solar Thermal incentive	4,226,947	-	0%	-	-	0%	4,226,947
		Municipal Water/Wastewater	1,245,242	-	0%	-	-	0%	1,245,242
	Green Residential Buildings	2,744,601	-	0%	-	-	0%	2,744,601	
	Innovative GHG Abatement Strategies	Southern Tier Competition (76 West)	10,262,850	-	0%	737,150	-	0%	11,000,000
		Brookhaven National Lab- ION Collidor	25,000,000	-	0%	-	-	0%	25,000,000
		Electric Vehicle/Charge NY	11,188,399	-	0%	65,111,601	9,766,740	15%	76,300,000
		Advanced Buildings & Industrial Innovations	13,307,654	-	0%	-	-	0%	13,307,654
		Climate Research & Analysis	8,729,296	-	0%	-	-	0%	8,729,296
		Competitive GHG Reduction Pilot	972,650	-	0%	-	-	0%	972,650
		Clean Energy Business Development	5,809,987	-	0%	-	-	0%	5,809,987
		Transportation Research	3,819,311	-	0%	-	-	0%	3,819,311
PV Manufacturing consortium		8,480,000	-	0%	-	-	0%	8,480,000	
Carbon Sequestration		1,000,000	-	0%	-	-	0%	1,000,000	
Community Clean Energy	Cleaner Greener Communities	94,261,895	-	0%	-	-	0%	94,261,895	
	Clean Energy Communities	2,086,963	-	0%	11,186,157	3,600,000	32%	13,273,120	
	Climate Smart Communities	5,321,157	-	0%	2,353,842	-	0%	7,674,999	
	Community Energy Engagement	675,730	-	0%	3,724,270	3,000,000	81%	4,400,000	
	Economic Development Growth Extension	5,562,723	-	0%	280,324	-	0%	5,843,047	
	Energy to Lead	3,000,000	-	0%	-	-	0%	3,000,000	
	Renewable/Net-Zero Energy Demonstrations	3,000,000	-	0%	6,000,000	-	0%	9,000,000	
	Priority Population Workforce Development	-	-	-	11,000,000	7,150,000	65%	11,000,000	
Regional Economic Development & GHG Reduction	10,246,443	-	0%	-	-	0%	10,246,443		
Directed	NYS Environmental Tax Credits	133,000,000	19,950,000	15%	92,000,000	13,800,000	15%	225,000,000	
	NYS Environmental Protection Fund	-	-	-	20,000,000	7,000,000	35%	20,000,000	
	Elec Generation Facility Cessation Mitigation/Just Transition	30,000,000	30,000,000	100%	20,000,000	20,000,000	100%	50,000,000	
	Green Jobs-Green NY- Original Legislation	112,000,000	39,200,000	35%	-	-	0%	112,000,000	
	Green Jobs-Green NY- Additional Funding	105,025,275	36,758,846	35%	85,718,656	53,401,530	62%	190,743,931	
	Transfer to Clean Energy Standard	719,424	-	0%	-	-	0%	719,424	
	NYS Budget Transfer	90,000,000	-	0%	-	-	0%	90,000,000	
SUBTOTAL	1,066,063,956	243,543,933	23%	489,764,167	191,389,088	39%	1,555,828,123		
Excluded	Administration and Other Non-Program Costs	CEP	73,790,932	-	-	132,459,068	-	-	206,250,000
		Transfer to/from) Clean Energy Fund	31,931,071	-	-	30,165,288	-	-	62,096,359
		Program Administration	5,999,519	-	-	3,155,910	-	-	9,155,429
		Program Evaluation	21,900,366	-	-	-	-	-	21,900,366
		Commensurate Benefit/Litigation reserve	1,598,204	-	-	-	-	-	1,598,204
		RGGI Inc Startup Costs	7,746,048	-	-	3,912,619	-	-	11,658,667
		RGGI Inc pro-rata costs	12,606,619	-	-	4,737,913	-	-	17,344,532
		State Cost Recovery	-	-	-	-	-	-	-
SUBTOTAL	155,572,759	-	-	174,430,798	-	-	330,003,557		
TOTAL	1,221,636,715	243,543,933	23%	664,194,965	191,389,088	39%	1,885,831,680		

Resolution No. _____

RESOLVED, that revisions to the “Operating Plan for Investments in New York Under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Program” as presented to the Members for consideration at this February 3, 2021 meeting, with such non-substantive, editorial changes and supplementary schedules as the Acting President and Chief Executive Officer, in her discretion, may deem necessary or appropriate, are approved;

AND BE IT FURTHER RESOLVED, that the Members direct the Acting President and Chief Executive Officer to develop a revised operating plan incorporating such revisions as soon as reasonably possible.

NEW YORK STATE

ENERGY RESEARCH AND DEVELOPMENT AUTHORITY BY-LAWS

As Amended through ~~October 2019~~February 2021

NEW YORK STATE
ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

BY-LAWS

ARTICLE I

Offices

SECTION 1. Principal Office. The principal office of the Authority shall be located at such place within the State of New York as the Authority shall designate.

SECTION 2. Other Offices. The Authority may also have offices at such other place or places within the State of New York as the Authority may from time to time determine to be necessary or appropriate for the conduct of its operations.

SECTION 3. Books and Records. Except as otherwise directed by the Authority or as the operations of the Authority may require, all the books and records of the Authority shall be kept at the principal office of the Authority.

ARTICLE II

Members and Meetings

SECTION 1. Members. The powers of the Authority, including, but not limited to Section 2824 of the Public Authorities Law, shall be vested in and exercised by the Members of the Authority who shall be selected as provided in the New York State Energy Research and Development Authority Act and shall hold office subject to the terms and conditions therein set forth.

SECTION 2. Annual Meetings. The Annual Meeting of the Authority shall be held without notice on the second Monday in June in each year or on such other date in each calendar year as the Chair may designate by notice given to the other Members.

SECTION 3. Regular Meetings. Regular meetings of the Authority shall be held without notice on the second Monday in January, April, and September of each year or on such other dates as the Chair may designate by notice given to the other Members.

SECTION 4. Special Meetings. Special meetings of the Authority may be called by the Chair and shall be called by the Secretary at the request of the Chair or upon the written request of any three Members.

SECTION 5. Place of Meetings. The Annual Meeting of the Authority shall be held at the principal office of the Authority unless the Chair shall designate a different place or places for attendance in person or through videoconferencing by notice given to the other Members. Other meetings of the Authority may be held either within or without the State of New York at such places for attendance in person or through videoconferencing as may be designated in the respective notice of meeting or waiver thereof or as may be fixed by the Authority in the case of regular meetings of the Authority.

SECTION 6. Notices. Except as otherwise provided by these By-Laws, whenever a meeting is scheduled at least one week in advance, written notice of that meeting of the Authority, specifying the time, place, and purposes thereof, shall be given to each Member by mail, e-mail, telephonic facsimile transmission, or other electronic means at least five days before such meeting. For every other meeting, notice shall be given in person or by email, or telephonic facsimile transmission at least twenty-four hours before such meeting, to the extent practicable. Notices by mail shall be deemed to have been given at the time when mailed to such Member at his or her address on the records of the Authority; notices by email shall be deemed to have been given at the time when transmission of such notice to the Member's email address on the records of the Authority has been completed, with no notice of a failure to deliver being received; notices by telephonic facsimile transmission shall be deemed to have been given at the time when transmission to such Member at his or her telephonic facsimile transmission number on the records of the Authority has been completed. If videoconferencing is used to conduct a meeting, the notice shall state that the public has the right to attend the meeting at any location.

SECTION 7. Waiver of Notice. In lieu of the notice prescribed in Section 6 of this Article II a waiver thereof in writing, signed by the Member or Members entitled to such notice whether before or after the time stated therein, shall be deemed equivalent to such notice for purposes of these By-Laws. No notice to or waiver by any Member with respect to any meeting shall be required if such Member is present at such meeting.

SECTION 8. Quorum and Voting. A majority of the whole number of the Members, gathered together in the presence of each other or through the use of videoconferencing, shall constitute a quorum for the transaction of any business or the exercise of any power or function of the Authority. Any act taken at any meeting by a majority of the whole number of the Members shall be the act of the Authority. For the purposes of these By-Laws, the words "whole number" shall mean the total number of the Members if there were no vacancies and if none of the Members are disqualified from acting.

SECTION 9. Approval of Governor. Except to the extent the Governor of the State of New York has, by order filed with the Authority, relieved the Authority from the duty of procuring his or her approval of any action upon a particular matter or class of matters, no action taken at any meeting of the Authority shall have force or effect until the Governor shall have had an opportunity to approve or veto the same in accordance with the provisions of Section 1853 of the Public Authorities Law.

ARTICLE III

Officers

SECTION 1. In General. The officers of the Authority shall be a Chair, Vice Chair, President and CEO, Senior Vice President for Strategy and Market Development, the Vice President for Policy and Regulatory Affairs, Secretary, and Treasurer, and such additional officers as may be appointed pursuant to Section 2 of this Article III. Except for the Chair and the Vice Chair, who shall each be a Member of the Authority, no officer need be a Member of the Authority. Any two offices, other than those of the Chair and Vice Chair, may be held by the same person.

SECTION 2. Appointment. The Chair shall be the Member of the Authority so designated by the Governor of the State of New York. The Authority shall appoint persons to fill the other offices of the Authority established in Section 1 of this Article III, and may from time to time appoint such additional officers as it may deem advisable and prescribe their respective powers and duties.

SECTION 3. Terms and Compensation. The Chair shall serve as Chair at the pleasure of the Governor of the State of New York. All officers of the Authority other than the Chair shall hold office at the pleasure of the Authority and shall receive such compensation as may be authorized by the Authority, subject to applicable provisions, if any, of the Civil Service Law and the regulations of the Civil Service Commission of the State of New York.

SECTION 4. Removal. The Chair may be removed as Chair, with or without cause, at any time, by the Governor of the State of New York acting at his pleasure. Any officer, other than the Chair, may be removed, with or without cause, at any time, by the Authority at any meeting called for that purpose.

SECTION 5. Resignation. Any officer may resign at any time by giving written notice to the Chair or to the Secretary, except that, in the case of the resignation of the Chair or a Member, such notice shall be given to the Governor of the State of New York. Any such resignation shall take effect upon the receipt of such notice or any later time specified therein,

and, unless otherwise specified therein, the acceptance of resignation of an officer other than the Chair or a Member shall not be a condition to its effectiveness.

SECTION 6. Vacancies. A vacancy in any office shall be filled in the manner prescribed in these By-Laws for appointment to such office.

ARTICLE IV

Duties and Powers of the Officers

SECTION 1. The Chair. The Chair shall preside over meetings of the Authority and shall serve as the primary liaison between the Members and Authority staff. The Chair shall be primarily responsible for overseeing the discharge of the executive and administrative functions of the Authority. The Chair shall be responsible for the management, development, and effective performance of the Members and provide leadership to the Members for all aspects of their work. The Chair shall act in an advisory capacity to the President and CEO and to the other management staff in all matters concerning the interests of the Members and the relationships between management and the Members. The Chair shall have the power to assign any officer to exercise the powers of any other officer during the period of any absence, disability or vacancy in any office. The Chair shall have all such other powers pertaining to the position of Chair or as may be assigned to the Chair by the Members of the Authority.

SECTION 2. The Vice Chair. The Vice Chair shall have the powers and shall perform the duties of the Chair during the period of any absence (including vacancy in office) or disability of the Chair. The Vice Chair shall perform such other duties as may be assigned from time to time by the Authority or the Chair.

SECTION 3. The President and CEO. The President and CEO shall be the chief executive officer of the Authority and shall be primarily responsible for the discharge of the executive and administrative functions of the Authority. The President and CEO shall report to the Chair on the day-to-day executive and administrative functions of the Authority. The President and CEO shall be responsible for the overall supervision of the other Officers, except the Chair and the Vice Chair, and staff and the implementation of policies, procedures, and directions, consistent with the guidance provided by the Members and the Chair. Subject to the provisions of the Authority's Procurement and Program Contracts Guidelines, Operative Policy and Instructions ("Contracting Guidelines"), the President and CEO shall have power to execute contracts, agreements, and other instruments in the name and on behalf of the Authority, including instruments encumbering funds; power to requisition disbursements from Authority bank accounts from the State Commissioner of Taxation and Finance, pursuant to Section 1859 of the Public Authorities Law; power to certify official rules and regulations of the Authority; and power to assign additional duties to any other Officer of the Authority except the Chair and the Vice Chair, and designate acting officers to perform necessary duties. The President and CEO shall also be authorized to exercise the powers of the Chair during the period of any

absence (including vacancy in office) or disability of the Chair and the Vice Chair. The President and CEO shall have the power to assign any other officer to exercise the powers of any officer, including the President and CEO, during the period of any absence, disability or vacancy in any office. The President and CEO shall have the power to assign the ability to requisition disbursements from Authority bank accounts from the State Commissioner of Taxation and Finance, pursuant to Section 1859 of the Public Authorities Law to the Controller and Assistant Treasurer, or NY Green Bank personnel responsible for managing finance or operational matters, as designated by the President of NY Green Bank. The President and CEO shall perform such other duties as may be assigned from time to time by the Authority or the Chair.

SECTION 4. The Vice Presidents. There shall be a Senior Vice President for Strategy and Market Development and a Vice President for Policy and Regulatory Affairs.

(A) The Senior Vice President for Strategy and Market Development. The Senior Vice President for Strategy and Market Development shall be responsible to the President and CEO for the discharge of the Authority's market development programs. The Senior Vice President for Strategy and Market Development also shall be responsible to the President and CEO for providing strategic guidance in program development and ongoing performance management across the Authority. Subject to the provisions of the Authority's Contracting Guidelines, the Senior Vice President for Strategy and Market Development shall have power to execute contracts, agreements, and other instruments in the name and on behalf of the Authority, including instruments encumbering funds in an amount not to exceed \$1,000,000; and power to requisition disbursements from Authority bank accounts from the State Commissioner of Taxation and Finance, pursuant to Section 1859 of the Public Authorities Law. The Senior Vice President for Strategy and Market Development shall perform such other duties as may be assigned from time to time by the Authority or the President and CEO.

(B) The Vice President for Policy and Regulatory Affairs. The Vice President for Policy and Regulatory Affairs shall be responsible to the President and CEO for the discharge of the Authority's policy and regulatory affairs function. Subject to the provisions of the Authority's Contracting Guidelines, the Vice President for Policy and Regulatory Affairs shall have power to execute contracts, agreements, and other instruments in the name and on behalf of the Authority, including instruments encumbering funds in an amount not to exceed \$1,000,000; and power to requisition disbursements from Authority bank accounts from the State Commissioner of Taxation and Finance, pursuant to Section 1859 of the Public Authorities Law. The Vice President for Policy and Regulatory Affairs shall perform such other duties as may be assigned from time to time by the Authority or the President and CEO.

SECTION 5. The Treasurer. Subject to the provisions of the New York State Energy Research and Development Authority Act and the State Finance Law, the Treasurer shall be the chief financial officer and shall have the care and custody of and be responsible for all the funds and securities of the Authority and receive and give receipts for moneys paid to the Authority from any source. The Treasurer shall administer the system of accounts prescribed by the Authority and shall render a statement of the condition of the finances of the Authority as at the

end of the first three quarterly periods in each fiscal year, and at such other times as may be required and shall render a full financial report at the Annual Meeting of the Authority held in June of each year. The Treasurer shall be responsible for information technology activities as well as for the disposition of real and personal property. The Treasurer shall perform such other duties as may be assigned from time to time by the Authority or the President and CEO. The Treasurer shall give such bond, if any, for the faithful discharge of his or her duties as may be required by the Authority or by any provision of law. Subject to the provisions of the Authority's Contracting Guidelines, the Treasurer shall have power to execute contracts, agreements, and other instruments in the name and on behalf of the Authority, including instruments encumbering funds in an amount not to exceed \$1,000,000; and power to requisition disbursements from Authority bank accounts from the State Commissioner of Taxation and Finance, pursuant to Section 1859 of the Public Authorities Law.

SECTION 6. The Secretary. The Secretary shall act as recording secretary at all meetings of the Authority and keep the minutes thereof in a book or books to be provided for that purpose; shall see that all notices of meetings required to be given are duly given; and shall see that all reports, statements, and other documents required by law are properly kept and filed. The Secretary shall transmit all rules and regulations adopted by the Authority to the Secretary of State pursuant to the provisions of Section 102 of the Executive Law. Subject to the provisions of the Authority's Contracting Guidelines, the Secretary shall have power to execute contracts, agreements, and other instruments in the name and on behalf of the Authority, including instruments encumbering funds in an amount not to exceed \$1,000,000; and power to requisition disbursements from Authority bank accounts from the State Commissioner of Taxation and Finance, pursuant to Section 1859 of the Public Authorities Law. The Secretary shall have power, when necessary or appropriate, to certify all documents and records of the Authority and to affix and attest to the corporate seal of the Authority on all contracts, agreements, and other instruments of the Authority. The Secretary shall perform such other duties as may be assigned from time to time by the Authority, the Chair, or the President and CEO.

ARTICLE V

Advisory Committees

SECTION 1. Appointment. The Authority may appoint one or more advisory committees consisting of not more than seven Members each to consider and advise the Authority on matters submitted to them by the Authority.

SECTION 2. Terms. Upon the appointment of an Advisory Committee, the Authority shall specify the terms, not to exceed four years, of each Member thereof.

SECTION 3. Salaries. Members of Advisory Committees shall serve without salary, but shall be entitled to reimbursement for their actual and necessary travel expenses incurred in the performance of their official duties.

SECTION 4. Audit and Finance Committee. The Audit and Finance Committee shall be a standing advisory committee of the Authority. The Committee shall have not fewer than three nor more than six Members. The Committee shall consist of not less than three independent Members who shall constitute a majority on the Committee and who shall possess the necessary skills to understand the duties and function of the Committee, provided, however, that in the event that there are less than three independent Members, the Members may appoint non-independent Members, provided that the independent Members constitute a majority of the Members of the Committee. In addition, the membership of the Committee shall include the Chair of the Authority who shall serve ex-officio and who shall enjoy all the rights and privileges of membership, including the right to vote. A majority of the members of the Committee then in office, not including the Chair of the Authority, gathered together in the presence of each other or through the use of videoconferencing, shall constitute a quorum, and the Chair of the Authority if present shall be counted toward a quorum. Members of the Committee shall be familiar with corporate financial and accounting practices.

The Audit and Finance Committee shall recommend the hiring of a certified independent accounting firm, establish the compensation to be paid, and provide direct oversight of the performance of the independent audit performed, shall review the annual financial statements of the Authority prior to submission for approval to the Members of the Authority, shall review proposals for the issuance of debt by the Authority and make recommendations, and may examine and consider such other matters in relation to the internal and external audit of the Authority's accounts, the Authority's financings, and in relation to the financial affairs of the Authority and its accounts as the Audit and Finance Committee may determine to be desirable.

SECTION 5. Program Planning Committee. The Program Planning Committee shall be a standing advisory committee of the Authority. The Committee shall have not fewer than three nor more than ten Members, who shall be elected from among the Members of the Authority other than the Chair. A majority of these committee members shall be other than Members of the Authority who serve ex-officio. In addition, the membership of the Committee shall include the Chair of the Authority, who shall serve ex-officio and who shall enjoy all the rights and privileges of membership, including the right to vote. A majority of the members of the Committee then in office, not including the Chair, gathered together in the presence of each other or through the use of videoconferencing, shall constitute a quorum, and the Chair of the Authority if present shall be counted toward a quorum.

The Program Planning Committee shall review the annual updating of the Authority's strategic plan; and preparation of the portions of the Authority's annual budget related to energy research and innovation, market development, clean energy financing, and other related programs and initiatives; shall provide guidance to the Authority's officers and employees in the

preparation of those plans and those portions of the budget; and shall consider such other matters related to the Authority's portfolios as the officers of the Authority may refer to the Committee.

SECTION 6. Waste and Facilities Management Committee. The Waste and Facilities Management Committee shall be a standing advisory committee of the Authority. The Committee shall have not fewer than three nor more than six members, who shall be elected from among the Members of the Authority other than the Chair. A majority of these committee members shall be other than Members of the Authority who serve ex-officio. In addition, the membership of the Committee shall include the Chair of the Authority, who shall serve ex-officio and who shall enjoy all the rights and privileges of membership, including the right to vote. A majority of the members of the Committee then in office, not including the Chair of the Authority, gathered together in the presence of each other or through the use of videoconferencing, shall constitute a quorum, and the Chair of the Authority if present shall be counted toward a quorum.

The Waste and Facilities Management Committee shall review the Authority's program and plans for management of the Western New York Nuclear Service Center, including the West Valley Demonstration Project, and for radioactive waste policy and nuclear coordination; shall review the preparation of the Authority's annual West Valley site management program and radioactive waste policy and nuclear coordination budgets; shall provide guidance to the Authority's officers and employees in the preparation of the plans and in preparation of such annual program budgets; shall review the Authority's plans and provide guidance for the facilities owned by or under the control of the Authority; and shall consider such other matters related to West Valley site management and radioactive waste policy and nuclear coordination as the officers of the Authority may refer to such Committee.

SECTION 7. Governance Committee. The Governance Committee shall be a standing advisory committee of the Authority. The Committee shall have not fewer than three nor more than six Members. The Committee shall consist of not less than three independent Members who shall constitute a majority on the Committee and who shall possess the necessary skills to understand the duties and function of the Committee, provided, however, that in the event that there are less than three independent Members, the Members may appoint non-independent Members, provided that the independent Members constitute a majority of the Members of the Committee. In addition, the membership of the Committee shall include the Chair of the Authority who shall serve ex-officio and who shall enjoy all the rights and privileges of membership, including the right to vote. A majority of the members of the Committee then in office, not including the Chair of the Authority, gathered together in the presence of each other or through the use of videoconferencing, shall constitute a quorum, and the Chair of the Authority if present shall be counted toward a quorum.

The Governance Committee shall keep the Members informed of current best practices, review corporate governance trends, update the Authority's corporate governance principles, as necessary, recommend updates to the corporate governance principles, advise appointing authorities on the skills and experiences required of Members, examine ethical and conflict of

interest issues, perform Board self-evaluation, and recommend By-laws which include rules and procedures for conduct of Board business.

ARTICLE VI

Miscellaneous

SECTION 1. Seal. The official seal of the Authority shall consist of a circle within which shall be inscribed the name of the Authority, and in the center of which shall be inscribed the words "Established April 1, 1962," and such seal may include such other insignia as may be approved by the Authority.

SECTION 2. Fiscal Year. The fiscal year of the Authority shall begin on the first day of April and end at the close of business on the thirty-first day of March in each year.

SECTION 3. Annual and Budget Reports. The President and CEO shall prepare or cause to be prepared under the Chair's supervision the Annual Report, Budget Report and other reports required by Sections 1867, 2800, and 2801 of the Public Authorities Law. All such reports shall be prepared for submission to and action by the Authority, and, after action by the Authority, shall be submitted by the President and CEO within the times provided for and to the persons specified in such sections of the Public Authorities Law.

SECTION 4. Director of Contract Management. Subject to the provisions of the Authority's Contracting Guidelines, the Director of Contract Management shall have the power to execute contracts, agreements, and other instruments in the name and on behalf of the Authority, including instruments encumbering funds in an amount not to exceed \$100,000 and for low variability, low complexity contracts issued as offer letters or similar straightforward standard agreements the amounts of which are based upon a formulaic calculation dictated by program, not to exceed \$1,000,000.

SECTION 5. The President of NY Green Bank. The President of NY Green Bank shall have power to execute contracts, agreements, or other instruments not encumbering Authority funds in excess of \$250,000; the power to execute contracts, agreements, or other instruments related to financial investments for any dollar amount, so long as the terms and conditions of such contracts, agreements, or other instruments are within parameters set by NY Green Bank's Investment and Risk Committee; and the power to execute any modifications to Investment and Risk Committee-approved financial investment documents not encumbering Authority funds in excess of \$50,000. During the period of any absence or disability, the President of NY Green Bank shall have the power to assign his aforementioned powers to one or more NY Green Bank

Managing Directors for Investment and Portfolio Management, provided that such delegee is not the Managing Director assigned to the subject transaction.

SECTION 6. The Managing Directors of NY Green Bank. Each of the Managing Directors of NY Green Bank shall have power to execute contracts, agreements, modifications, or other instruments not encumbering Authority funds in excess of \$50,000.

ARTICLE VII

Amendments

SECTION 1. Amendments. These By-Laws may be amended, supplemented or repealed by the affirmative vote of a majority, but not less than five, of the Members then in office, at any regular or special meeting if either all Members of the Authority then in office are present at such meeting or notice of the proposed amendments, supplement or repeal shall have been included in the notice of such meeting or in the waiver of notice thereof.

Resolution No. _____

RESOLVED, that the amendments to Article V, Section 6 of the Authority's By-laws as presented at this February 3, 2021 meeting, are hereby approved and adopted.

Periodic Contracts Approvals

Contracts executed or modified during the period - 8/16/2020 to 12/15/2020

	Count of Contracts	Committed this Period
Procurement Contracts > 1year	107	\$38.8M
Competitive Program Contracts > \$3M	27	\$746.0M
Non-competitive Program Contracts > \$1M	1	\$0.1M
Grand Total	135	\$784.8M

Contracts anticipated to be executed or modified during the period - 8/16/2020 to 12/15/2020

	Count of Contracts	Anticipated Amount
Procurement Contracts > 1year	35	\$9.5M
Competitive Program Contracts > \$3M	5	\$35.0M
Non-competitive Program Contracts > \$1M	2	\$1.1M
Grand Total	42	\$45.5M

NYSDERDA PERIODIC CONTRACTS APPROVAL REPORT: Section 1
Summary - 8/16/2020 to 12/15/2020

Category	Report Type	Type	Count of Contracts	Committed this period
PCMT	Procurement	Competitive	81	\$36,998,947
		Discretionary	20	\$1,090,168
		Non-Competitive	6	\$700,168
	Total		107	\$38,789,283
PGRM	Procurement	Competitive	27	\$745,971,850
		Non-Competitive	1	\$50,000
	Total		28	\$746,021,850
Grand Total			135	\$784,811,133

NYSERDA PERIODIC CONTRACTS APPROVAL REPORT - 8/16/2020 to 12/15/2020

Category	Initiative	Type	Term > 1 Year	Contract ID	Contractor	Contract Description	Date	Committed this period	Committed to Date	Amt Paid this Period	Amt Paid to Date
PCMT	Air Source Heat Pumps	Competitive	Y	158961	The Cadmus Group, LLC	TWO #9 Whole House ASHP	10/01/2020	\$50,000	\$50,000		
		Discretionary	Y	153829	Owahgena Consulting, Inc.	Heat Pump Technical Assistance	04/30/2020	\$106,413	\$156,413	\$43,731	\$69,763
CI Carbon Challenge		Competitive	Y	ADH0014470	CHA Consulting Inc.	SA.019_TWO#1 - Industrial	11/20/2020	\$302,348	\$302,348		
		Competitive	Y	ADH0014874	CHA Consulting Inc.	SA.030_TWO#2 - Industrial	11/20/2020	\$179,000	\$179,000		
		Competitive	Y	ADH0014876	CHA Consulting Inc.	SA.031_TWO#3 - Industrial	11/24/2020	\$157,500	\$157,500		
		Competitive	Y	ADH0014878	CHA Consulting Inc.	SA.034_TWO#5 - Industrial	11/25/2020	\$150,142	\$150,142		
		Competitive	Y	ADH0014886	EME Consulting Engineering Group, LLC	SA.034_TWO#4 - Industrial	11/24/2020	\$154,757	\$154,757		
CI Engy Siting & Soft Cost Red		Competitive	Y	157999	Bond, Schoeneck & King, PLLC	BR-Outside Legal	09/10/2020	\$100,000	\$100,000	\$49,268	\$49,268
CLEAN TRANSPORTATION		Competitive	Y	140105	Industrial Economics, Incorporated	TWO 2 New York State Truck – V	05/09/2019	\$1,612,767	\$2,012,767	\$50,045	\$399,999
Cleantech ICC Engage		Competitive	Y	160596	Randstad North America, Inc.	Payroll Services_Innovation	11/09/2020	\$305,897	\$305,897	\$6,143	\$6,143
Cleantech Incubator		Competitive	Y	159390	Willdan Energy Solutions	SA.062a_TWO#4 Tech to Market	10/09/2020	\$328,680	\$328,680		
		Competitive	Y	161136	Randstad North America, Inc.	Payroll Services_T2M	11/19/2020	\$251,478	\$251,478		
Cleantech Startup Growth		Competitive	Y	104544A	Opinion Dynamics Corporation	RFQ3183 Umbrella Agreement	04/03/2019	\$108,669	\$422,232	\$18,697	\$133,221
Code to Zero		Competitive	Y	158886	Newport Ventures, Inc.	TWO3 Energy Code and NYStretch	09/29/2020	\$1,150,000	\$1,150,000		
Commercial Real Estate Ten		Competitive	Y	144829	Energy & Resource Solutions, Inc.	TWO 5 CEF Comm Impact_ERS	09/12/2019	\$79,920	\$503,920	\$61,865	\$96,869
		Discretionary	Y	157938	NYC Climate Action Alliance Inc.	NYC Climate Action: Energy Sol	09/09/2020	\$50,000	\$50,000		
		Discretionary	Y	158362	Environmental Defense Fund	Tenant Engagement - EDF	09/17/2020	\$49,888	\$49,888		
Empire Building Challenge		Competitive	Y	156748	Rocky Mountain Institute	Empire Bldg. Challenge - RMI	08/07/2020	\$179,007	\$179,007	\$117,077	\$117,077
ENERGY ANALYSIS		Competitive	Y	101128	ICF Resources, LLC	Tech Assist, REV Pool	07/15/2016	\$100,000	\$901,977	\$78,050	\$851,527
		Competitive	Y	135251	Industrial Economics, Incorporated	TWO 1 EE Supply Curve Analysis	12/17/2018	\$70,000	\$368,668	\$48,648	\$327,123
		Competitive	Y	152281	Energy and Environmental Economics Inc.	TWO#22 Bldg. Elec. Roadmap	03/09/2020	\$380,000	\$630,000	\$293,466	\$449,806
Environmental Research		Competitive	Y	154006	Ecology & Environment, Inc.	Owner's Engineering	05/05/2020	\$15,908	\$807,153	\$364,009	\$364,009
		Competitive	Y	154265	American Solar Grazing Association, Inc.	PON 4270 PV Site Design	05/19/2020	\$198,000	\$198,000		
		Competitive	Y	154268	DNV GL Energy USA, Inc.	PV Solar Site Design- PON 4270	05/19/2020	\$184,725	\$184,725		
		Competitive	Y	154272	Cornell University	PON 4270 PV Site Design	05/19/2020	\$199,999	\$199,999		
		Competitive	Y	154273	The Nature Conservancy	PV Site Design (PON 4270)	05/19/2020	\$198,000	\$198,000		
		Competitive	Y	154274	Tetra Tech, Inc.	PON 4270 PV Site Design	05/19/2020	\$233,000	\$233,000		
		Competitive	Y	156225	Fund for Public Health in New York, Inc.	Assessment for Energy Policy	07/27/2020	\$273,900	\$273,900		
		Competitive	Y	156226	University of Rochester	Changes in PM Composition	07/27/2020	\$548,153	\$548,153		

NYSDA PERIODIC CONTRACTS APPROVAL REPORT - 8/16/2020 to 12/15/2020

Category	Initiative	Type	Term > 1 Year	Contract ID	Contractor	Contract Description	Date	Committed this period	Committed to Date	Amt Paid this Period	Amt Paid to Date
PCMT	Environmental Research	Competitive	Y	156227	The Research Foundation for the State	Mobile Laboratory Measurements	07/27/2020	\$398,946	\$398,946		
		Competitive	Y	158363	Harrisburg University of Science and Tec	spatial and temporal variation	09/17/2020	\$349,976	\$349,976		
		Discretionary	Y	137484	University of Rochester	AQHE PON 3921	02/25/2019	\$49,057	\$49,057		
		Discretionary	Y	160006	Ithaca College	Methane emissions measurements	10/26/2020	\$49,913	\$49,913		
		Discretionary	Y	160536	The Trustees of Columbia University	methane emissions measurements	11/05/2020	\$49,743	\$49,743		
ESTOR:Consumer Education	Competitive	Y	147151	Kelliher Samets Volk	KSV TWO 31 Energy Storage	11/05/2019	\$38,150	\$70,090	\$31,928	\$50,883	
Home Perf w Energy Star	Competitive	Y	107771	CLEARresult Consulting, Inc.	Centralized Services & Support	12/08/2016	\$218,749	\$8,655,602	\$1,500,524	\$7,999,699	
	Competitive	Y	116844	CLEARresult Consulting, Inc.	Technical Support SFR	08/09/2017	\$6,588,266	\$15,758,368	\$908,516	\$8,730,929	
	Competitive	Y	161421	Allegis Group Holdings Inc	SA.070_TWO#11 - EAE PM	11/30/2020	\$403,767	\$403,767			
Housing Agencies Support	Competitive	Y	160946	Randstad North America, Inc.	Payroll Services_Multifamily	11/16/2020	\$283,920	\$283,920	\$7,862	\$7,862	
Industrial Process Effic	Competitive	Y	121104	CHA Consulting Inc.	Outreach Support	11/29/2017	\$120,000	\$1,535,060	\$97,744	\$1,306,556	
K-12 SCHOOLS	Competitive	Y	ADH0014842	TRC Energy Services	SA.026a_TWO#13 - EPE	11/19/2020	\$346,403	\$346,403			
	Competitive	Y	ADH0014877	CHA Consulting Inc.	SA.035_TWO#4 - EPE	11/20/2020	\$168,695	\$168,695			
Low-Income Forum on Energy	Non-Competiti..	Y	116343	TRC Energy Services	LIFE Implementation Services	07/26/2017	\$85,853	\$376,928	\$34,440	\$227,914	
Multifam New Construction	Competitive	Y	ADH0014941	TRC Energy Services	SA.042_TWO#17 - NCP NYC PM	12/03/2020	\$415,185	\$415,185			
Multifam Performance Pgm	Competitive	Y	117924	Willdan Energy Solutions	Staff Augmentation Services	09/06/2017	\$215,596	\$1,119,612	\$83,658	\$702,364	
	Competitive	Y	117926	TRC Energy Services	Staff Augmentation Services	09/06/2017	\$2,892,946	\$8,958,597	\$869,463	\$5,155,153	
New Construction-Commercial	Non-Competiti..	Y	158216	New Buildings Institute, Inc.	2021 Getting to 0 Forum-Legacy	09/15/2020	\$49,965	\$49,965			
	Non-Competiti..	Y	158298	Egg Geo, LLC	SUNY Heat Pump Training	09/16/2020	\$50,000	\$50,000			
NEW YORK GREEN BANK	Competitive	Y	46964	Luminate, LLC	Outside Technical and Eng. Srv	09/05/2014	\$25,000	\$80,761	\$2,328	\$57,965	
	Competitive	Y	109917	BDO USA LLP	Background Investigation Servi	02/07/2017	\$31,100	\$85,850	\$36,600	\$85,850	
	Competitive	Y	149695	Holland & Knight LLP	RFP 12 - NYGB Legal Services	12/31/2019	\$40,686	\$214,216	\$37,719	\$211,249	
	Competitive	Y	149696	Nixon Peabody LLP	RFP 12 - NYGB Legal Services	12/31/2019	\$62,810	\$62,810			
NYCH: Consumer Awareness	Competitive	Y	155231	Kelliher Samets Volk	KSV TWO 34 NYS Clean Heat	06/27/2020	\$9,500,000	\$9,500,000	\$10,200	\$10,200	
	Discretionary	Y	156845	Ellen Lutz Consulting, LLC	ClnHeatStatewideUtilityCoMktg	08/11/2020	\$200,000	\$200,000	\$18,925	\$18,925	
NYCH: LMI	Competitive	Y	159686	Vermont Energy Investment Corporation	TWO #1 LMI Electrification	10/16/2020	\$99,860	\$99,860			
NYCH: Supply Chain	Competitive	Y	143834	Allegis Group Holdings Inc	SA.054_TWO #9 - SFR PM	08/16/2019	\$102,709	\$232,634	\$45,612	\$137,165	
NYSDA ADMINISTRATION	Competitive	Y	85025	Tech Valley Talent, LLC	RFP3143 Umbrella Agreement	12/18/2015	\$372,450	\$7,929,583	\$276,355	\$6,335,897	
	Competitive	Y	133389A	Ricoh USA Inc	RFP 3919-Sitecore CMS Admin	10/06/2020	\$606,692	\$606,692	\$163,906	\$163,906	

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Category	Initiative	Type	Term > 1 Year	Contract ID	Contractor	Contract Description	Date	Committed this period	Committed to Date	Amt Paid this Period	Amt Paid to Date
PCMT	NYSERDA ADMINISTRATION	Competitive	Y	140703	Randstad North America, Inc.	Payroll Services_Web Ops	05/24/2019	\$48,165	\$102,188	\$16,920	\$70,284
		Competitive	Y	140704	Randstad North America, Inc.	Payroll Services	05/24/2019	\$48,165	\$104,307	\$15,820	\$69,245
		Competitive	Y	155978	Erdman Anthony & Associates, Inc.	Building 17 FlexTech Study TWO	07/20/2020	\$25,849	\$25,849	\$3,103	\$3,103
		Competitive	Y	156630	Tech Valley Talent, LLC	TWO QA Analyst - Beth Graves	08/05/2020	\$204,750	\$204,750	\$35,280	\$35,280
		Competitive	Y	158005	Kelliher Samets Volk	KSV TWO 36 Website User Exper	09/10/2020	\$16,830	\$16,830	\$9,563	\$9,563
		Competitive	Y	159169	Zones LLC	SMARTnet - Maintenance 20 - 21	10/05/2020	\$26,909	\$26,909	\$26,909	\$26,909
		Competitive	Y	159492	Verizon Wireless	Verizon Wireless Cellular Serv	10/13/2020	\$90,111	\$90,111		
		Competitive	Y	159691	CVENT, Inc.	Event Management/Virtual Event	10/19/2020	\$148,080	\$148,080	\$64,310	\$64,310
		Competitive	Y	159710	TRC Energy Services	SA.069_TWO#19 - Contracts	10/20/2020	\$292,929	\$292,929	\$1,776	\$1,776
		Competitive	Y	159904	Zones LLC	G9 HP Server Support - 20-21	10/22/2020	\$20,038	\$20,038	\$20,038	\$20,038
		Competitive	Y	160477	Info-Tech Research Group Inc.	1-yr Info-Tech Research Group	11/04/2020	\$34,458	\$34,458		
		Competitive	Y	160597	Direct Packet Inc.	Video Service Renewal – Cisco	11/09/2020	\$29,341	\$29,341		
		Competitive	Y	161424	Carahsoft Technology Corporation	Salesforce 2021 Licensing	11/30/2020	\$1,509,403	\$1,509,403		
		Competitive	Y	161628	Randstad North America, Inc.	Payroll Services_SS APM	12/04/2020	\$187,590	\$187,590		
		Discretionary	Y	156841	T-REX Group, inc.	T-Rex Analytics Platform	08/11/2020	\$40,000	\$40,000	\$20,000	\$20,000
		Discretionary	Y	157019	Bynder LLC	WebDAM Photo Library	08/14/2020	\$26,925	\$26,925	\$8,975	\$8,975
		Discretionary	Y	157311	New York State Forum for IRM	NYS Forum Membership 20 - 21	08/24/2020	\$5,000	\$5,000		
		Discretionary	Y	158873	ThunderCat Technology LLC	Atlassian Licenses - Jira	09/28/2020	\$55,965	\$55,965	\$55,965	\$55,965
		Discretionary	Y	159609	ThunderCat Technology LLC	Checkmarx - Licensing and Supp	10/15/2020	\$61,606	\$61,606	\$57,669	\$57,669
		Discretionary	Y	159901	Troy Web Consulting, LLC	Troy Web Hosting - Cloud for 1	10/22/2020	\$7,380	\$7,380		
Discretionary	Y	159970	OwnBackup Inc.	Own backupSalesforce.KeyMgt	10/23/2020	\$32,383	\$32,383				
Discretionary	Y	160202	Network Experts of New York, Inc.	Network Consulting Services	10/29/2020	\$10,860	\$10,860				
Discretionary	Y	161086	Randstad North America, Inc.	Temp Services_Marketing	11/18/2020	\$141,183	\$141,183	\$1,419	\$1,419		
Non-Competiti..	Y	157686	inMotion, Inc.	inMotion Subscription	09/02/2020	\$84,848	\$84,848	\$28,283	\$28,283		
NYSERDA Fixed Asset		Competitive	Y	160488	Network Craze Technologies	Network.Equip.NYGB.1333.NYC	11/04/2020	\$56,645	\$56,645	\$56,645	\$56,645
		Discretionary	Y	157749	Complete Cabling Solutions LLC	Complete Cabling NYGB 1333	09/03/2020	\$25,896	\$25,896	\$25,896	\$25,896
Off-Shore Wind Master Plan		Competitive	Y	104258	Sive Paget & Riesel PC	RFP 3300 & RFP 3776 Outside Co	09/27/2016	\$100,000	\$1,313,490	\$23,482	\$999,971
OREC: Technical Support		Competitive	Y	158219	Kearns & West, Inc.	Facilitation for ORECRFP20	09/15/2020	\$50,000	\$50,000		
OTHER PROGRAM AREA		Competitive	Y	106227	Essense Partners Inc.	Marketing Support for NYSERDA	11/03/2016	\$23,760	\$2,887,330	\$148,586	\$2,389,809

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PCMT	OTHER PROGRAM AREA	Competitive	Y	161194	NESCAUM	TWO #8 AEROMMA	11/20/2020	\$523,427	\$523,427		
	Pay for Performance	Competitive	Y	144049	Allegis Group Holdings Inc	SA.055_TWO #10 - P4P PM	08/22/2019	\$39,248	\$392,220	\$13,074	\$160,365
		Competitive	Y	160149	Randstad North America, Inc.	Payroll Services_Utility Affai	10/28/2020	\$353,613	\$353,613	\$13,390	\$13,390
		Competitive	Y	160203	Randstad North America, Inc.	Payroll Services_Utility Affai	10/30/2020	\$273,000	\$273,000	\$9,696	\$9,696
	Real Time Enrgy Management	Competitive	Y	117928	Allegis Group Holdings Inc	Staff Augmentation Services	09/06/2017	\$211,468	\$2,066,986	\$202,022	\$1,298,576
		Competitive	Y	143835	EME Consulting Engineering Group, LLC	SA.056_TWO #10 - RTEM MF	08/16/2019	\$146,463	\$335,130	\$53,244	\$185,304
	REC:CES REC System Dev Costs	Discretionary	Y	158291	Sustainable Energy Advantage, LLC	REMO Subscription	09/16/2020	\$38,000	\$38,000	\$20,000	\$20,000
	Renewable Heat NY	Competitive	Y	159676	Randstad North America, Inc.	Payroll Services_CHC	10/16/2020	\$234,000	\$234,000	\$13,500	\$13,500
	REV Campus Challenge	Competitive	Y	144828	DNV GL Energy Insights USA Inc.	TWO 8 CEF Comm Impact_DNV	09/12/2019	\$9,820	\$382,820	\$11,364	\$60,477
		Competitive	Y	154094	Sustainable Endowment Institute	GRITS Goals Development - SEI	05/11/2020	\$50,000	\$50,000	\$39,994	\$39,994
		Non-Competiti..	Y	135754A	WSP USA Corp.	Commercial Market Engagement	12/11/2020	\$204,685	\$204,685		
	Rmve Barriers Dist Enrgy Storg	Competitive	Y	159704	Wadsworth Energy LLC	TWO #2 MDIWG Support	10/20/2020	\$75,000	\$75,000	\$5,775	\$5,775
	SARATOGA TECHNOLOGY & ENER..	Competitive	Y	107762	Rosenblum Property Services, LLC	STEP Property Mgmt Services	12/07/2016	\$24,890	\$914,465	\$63,425	\$568,194
	Subscription/Data Access	Discretionary	Y	160333	ACEEE	ACEEE sponsored research	11/02/2020	\$40,000	\$40,000		
	Talent Pipeline:CE and OJT	Competitive	Y	154034	BW Research Partnership	TWO# 1 CE Industry Report	05/06/2020	\$119,205	\$359,205	\$157,905	\$157,905
	Technical Services	Competitive	Y	117927	EME Consulting Engineering Group, LLC	Staff Augmentation Services	09/06/2017	\$728,186	\$3,634,063	\$287,701	\$1,781,957
		Competitive	Y	156896	TRC Energy Services	SA.061_TWO#23 - Multifamily	08/12/2020	\$289,255	\$289,255	\$26,487	\$26,487
		Discretionary	Y	155980	Ensava, Inc.	CEA Db&Benchmark Tool Creation	07/20/2020	\$49,956	\$49,956	\$7,729	\$7,729
		Non-Competiti..	Y	157752	Cornell University	NYS CEA Database GLASE	09/03/2020	\$224,817	\$224,817		
	WEST VALLEY DEVELOPMENT PROGR..	Competitive	Y	69939	AECOM Technical Services Inc.	Environmental Monitoring Suppo	07/28/2015	\$214,592	\$2,789,019	\$112,566	\$2,303,717
	PGRM	ESTOR:Bulk Storage Incentive	Competitive	Y	153425	Stillwell Energy Storage, LLC	Bulk Storage Incentive	04/13/2020	\$4,000,000	\$4,000,000	
		Competitive	Y	153428	Groundvault Energy Storage, LLC	Bulk Storage Incentive	04/13/2020	\$5,000,000	\$5,000,000		
		Competitive	Y	153429	Cleancar Energy Storage, LLC	Bulk Storage Incentive	04/13/2020	\$6,000,000	\$6,000,000		
NY-SUN		Competitive	Y	158289	Sun Source Technologies	NY Sun	09/16/2020	\$3,375,000	\$3,375,000		
Pay for Performance		Non-Competiti..	Y	132621A	Recurve Analytics, Inc.	RFP 3901 P4P-AMV Platform	06/27/2019	\$50,000	\$1,898,836	\$36,993	\$297,548
REC:CES REC Contracts		Competitive	Y	71908A	Northland Power U.S. Projects Inc.	Ball Hill Wind Farm	11/16/2020	\$122,865,629	\$122,865,629		
		Competitive	Y	121289A	Northland Power U.S. Projects Inc.	Bluestone Wind	08/26/2020	\$174,333,640	\$174,333,640		
		Competitive	Y	134570A	Northland Power U.S. Projects Inc.	High Bridge Wind	08/24/2020	\$137,079,080	\$137,079,080		
		Competitive	Y	148788	Boralex US Energy Inc	CESRFP1_Tier 1 RECS_Bald Mtn.	12/11/2019	\$11,879,960	\$11,879,960		

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Category	Initiative	Type	Term > 1 Year	Contract ID	Contractor	Contract Description	Date	Committed this period	Committed to Date	Amt Paid this Period	Amt Paid to Date
PGRM	REC:CES REC Contracts	Competitive	Y	148789	Boralex US Energy Inc	CESRFP1_Tier 1 RECS_West River	12/11/2019	\$11,879,960	\$11,879,960		
		Competitive	Y	148790	Boralex US Energy Inc.	CESRFP1_Tier 1 RECS	12/11/2019	\$69,916,454	\$69,916,454		
		Competitive	Y	148791	Boralex US Energy Inc	CESRFP1_Tier 1 RECS	12/11/2019	\$16,715,860	\$16,715,860		
		Competitive	Y	148794	Martin Rd Solar LLC	CESRFP1_Tier 1 RECS	12/11/2019	\$15,282,332	\$15,282,332		
		Competitive	Y	148798	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_Highview	12/11/2019	\$10,461,974	\$10,461,974		
		Competitive	Y	148799	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_TableTop	12/11/2019	\$27,678,561	\$27,678,561		
		Competitive	Y	148800	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_Fairway	12/11/2019	\$10,352,286	\$10,352,286		
		Competitive	Y	148801	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_ValleySola	12/11/2019	\$10,646,972	\$10,646,972		
		Competitive	Y	148802	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_Limestone	12/11/2019	\$10,380,223	\$10,380,223		
		Competitive	Y	148803	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_FlatHill	12/11/2019	\$11,320,113	\$11,320,113		
		Competitive	Y	148804	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_Grassy Kno	12/11/2019	\$11,439,204	\$11,439,204		
		Competitive	Y	148805	SunEast Renewables LLC	CESRFP1_Tier 1 RECS_Hilltop	12/11/2019	\$11,681,550	\$11,681,550		
		Competitive	Y	148806	Erie Wind LLC	CESRFP1_Tier 1 RECS	12/11/2019	\$3,421,760	\$3,421,760		
		Competitive	Y	148807	Canandaigua Power Partners LLC	CESRFP1_Tier 1 RECS	12/11/2019	\$43,104,630	\$43,104,630		
		Competitive	Y	148808	Niagara Wind Power LLC	CESRFP1_Tier 1 RECS	12/11/2019	\$6,376,580	\$6,376,580		
		Solar Plus Energy Storage		Competitive	Y	137404A	Standard Solar, Inc	NY-Sun C&I	09/23/2020	\$3,404,800	\$3,404,800
Competitive	Y			137405A	Standard Solar, Inc	NY-Sun C&I	09/23/2020	\$5,323,200	\$5,323,200		
Strategic Energy Manager		Competitive	Y	111309	Vermont Energy Investment Corporation	RFP 3352	03/09/2017	\$1,252,083	\$3,985,309	\$113,205	\$2,777,354
Talent Pipeline:CE and OJT		Competitive	Y	37382	TRC Energy Services	Technical Review and Program S	11/15/2013	\$800,000	\$3,786,144	\$332,986	\$2,637,775
Grand Total								\$784,811,133	\$843,561,850	\$7,398,470	\$50,378,202

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Contractor	SupplierAddress	SupplierCity	SupplierState	SupplierZipCode	Business Type	WBE	MBE	SDVOB	SBE
ACEEE	529 14th St. NW, Suite 600	Washington	DC	20045	FSBE				
AECOM Technical Services Inc.	515 South Flower Street, 3rd Floor	Los Angeles	CA	90071	FSBE				
Allegis Group Holdings Inc	7301 Parkway Drive	Hanover	MD	21076	FSBE				
American Solar Grazing Association, Inc.	863 Hayts Rd.	Ithaca	NY	14850	NYSBE				
BDO USA LLP	PO Box 642743	Pittsburgh	PA	15264-2743	FSBE				
Bond, Schoeneck & King, PLLC	22 Corporate Woods Blvd., Ste 501	Albany	NY	12211-2503	NYSBE				
Boralex US Energy Inc	Bald Mountain Solar LLC	South Glens Falls	NY	12803	NYSBE				
	Sandy Creek Solar LLC	South Glens Falls	NY	12803	NYSBE				
	West River Solar LLC	South Glens Falls	NY	12803	NYSBE				
Boralex US Energy Inc.	Greens Corners Solar LLC	Albany	NY	12203	NYSBE				
BW Research Partnership	6120 Paseo Del Norte, Suite D2	Carlsbad	CA	92011	FSBE				
Bynder LLC	24 Farnsworth St., Ste 400	Boston	MA	02210	FSBE				
Canandaigua Power Partners LLC	Cohocton Wind Project	New York	NY	10281	NYSBE				
Carahsoft Technology Corporation	11493 Sunset Hills Road	Reston	VA	20190	FSBE				
CHA Consulting Inc.	3 Winners Circle	Albany	NY	12205	NYSBE				
Cleancar Energy Storage, LLC	800 Taylor Street	Durham	NC	27201	FSBE				
CLEARresult Consulting, Inc.	4301 Westbank Dr., A-150	Austin	TX	78746	FSBE				
Complete Cabling Solutions LLC	PO Box 594	Fair Lawn	NJ	07410	FSBE				
Cornell University	341 Pine Tree Road	Ithaca	NY	14850	NYSBE				
CVENT, Inc.	1765 Greensboro Station Place	Tyson's Corner	VA	22102	FSBE				
Direct Packet Inc.	909 Lake Carolyn Parkway, Suite 1800	Irving	TX	75039	FSBE				
DNV GL Energy Insights USA Inc.	1400 Ravello Drive	Katy	TX	77449	FSBE				
DNV GL Energy USA, Inc.	1400 Ravello Drive	Katy	TX	77449-5164	FSBE				
Ecology & Environment, Inc.	368 Pleasant View Dr	Lancaster	NY	14086-1397	NYSBE				
Egg Geo, LLC	2860 Scherer Drive, Suite 640	St. Petersburg	FL	33716	FSBE				
Ellen Lutz Consulting, LLC	197 Lynnebrook Lake	Philadelphia	PA	19118	FSBE				
EME Consulting Engineering Group, LLC	129 West 27th Street	New York	NY	10001	NYSBE				
Energy & Resource Solutions, Inc.	120 Water Street, Suite 350	North Andover	MA	01845	FSBE				
Energy and Environmental Economics Inc.	2401 E Katella Ave.	Anaheim	CA	92806	FSBE				
Ensave, Inc.	65 Millett Street, Suite #105	Richmond	VT	05477	FSBE				

NYSERDA PERIODIC CONTRACTS APPROVAL REPORT: Contractor Addresses - 8/16/2020 to 12/15/2020

Contractor	SupplierAddress	SupplierCity	SupplierState	SupplierZipCode	Business Type	WBE	MBE	SDVOB	SBE
Environmental Defense Fund	257 Park Avenue South	New York	NY	10010	NYSBE				
Erdman Anthony & Associates, Inc.	145 Culver Road, Suite 200	Rochester	NY	14620	NYSBE				
Erie Wind LLC	Steel Winds Wind Farm 2	New York	NY	10281	NYSBE				
Essense Partners Inc.	216 East 45th St., 11th Floor	New York	NY	10017	NYSBE	X	X		
Fund for Public Health in New York, Inc.	22 Cortlandt Street, 11th Floor Suite 1103	New York	NY	10007	NYSBE				
Groundvault Energy Storage, LLC	800 Taylor Street	Durham	NC	27201	FSBE				
Harrisburg University of Science and Tec	326 Market Street	Harrisburg	PA	17101	FSBE				
Holland & Knight LLP	PO Box 864084	Orlando	FL	32886	FSBE				
ICF Resources, LLC	9300 Lee Highway	Fairfax	VA	22031	FSBE				
Industrial Economics, Incorporated	2067 Massachusetts Avenue	Cambridge	MA	02140	FSBE				
Info-Tech Research Group Inc.	3960 Howard Hughes Parkwa	Las Vegas	NV	89169	FSBE				
inMotion, Inc.	PO Box 744276	Atlanta	GA	30384-4276	FSBE				
Ithaca College	953 Danby Rd	Ithaca	NY	14850-7002	NYSBE				
Kearns & West, Inc.	1990 K Street Inc	Washington	DC	20006	FSBE				
Kelliher Samets Volk	212 Battery Street	Burlington	VT	05401	FSBE				
Luminate, LLC	1801 Broadway, Ste 1620	Denver	CO	80202	FSBE				
Martin Rd Solar LLC	c/o MAP Energy LLC	Palo Alto	CA	94306	FSBE				
NESCAUM	89 South Street	Boston	MA	02111	FSBE				
Network Craze Technologies	7037 Fly Rd.	East Syracuse	NY	13057	NYSBE				
Network Experts of New York, Inc.	407 Vesper Court	Slingerlands	NY	12159	NYSBE	X	X		
New Buildings Institute, Inc.	623 SW Oak Street	Portland	OR	97205	FSBE				
New York State Forum for IRM	24 Aviation Rd., Suite 206	Albany	NY	12205	NYSBE				
Newport Ventures, Inc.	22 Jay St	Schenectady	NY	12305-1917	NYSBE				
Niagara Wind Power LLC	Steel Winds Wind Farm	New York	NY	10281	NYSBE				
Nixon Peabody LLP	1300 Clinton Square	Rochester	NY	14604	NYSBE				
Northland Power U.S. Projects Inc.	Ball Hill Wind Energy, LLC	Houston	TX	77002	FSBE				
	Bluestone Wind, LLC	Houston	TX	07702	FSBE				
	High Bridge Wind, LLC	Houston	TX	07702	FSBE				
NYC Climate Action Alliance Inc.	560 Lexington Ave	New York	NY	10022	NYSBE				
Opinion Dynamics Corporation	1000 Winter St	Waltham	MA	02451	FSBE				

NYSERDA PERIODIC CONTRACTS APPROVAL REPORT: Contractor Addresses - 8/16/2020 to 12/15/2020

Contractor	SupplierAddress	SupplierCity	SupplierState	SupplierZipCode	Business Type	WBE	MBE	SDVOB	SBE
Owahgena Consulting, Inc.	1883 Ballina Road	Cazenovia	NY	13035	NYSBE				
OwnBackup Inc.	940 Sylvan Ave FL 1	Englewood Cliffs	NJ	07632	FSBE				
Randstad North America, Inc.	PO Box 2084	Carol Stream	IL	60132-2084	FSBE	X			
Recurve Analytics, Inc.	364 Ridgewood Ave	Mill Valley	CA	94941	FSBE				
Ricoh USA Inc	300 Eagleview Boulevard Suite 200	Exton	PA	19341	FSBE				
Rocky Mountain Institute	2490 Junction Place, Suite 200	Boulder	CO	80301	FSBE				
Rosenblum Property Services, LLC	PO Box 38070	Albany	NY	12203	NYSBE				
Sive Paget & Riesel PC	560 Lexington Ave., Floor 15	New York	NY	10022-1994	NYSBE				
Standard Solar, Inc	1355 Piccard Dr, Suite 300	Rockville	MD	20850	FSBE				
Stillwell Energy Storage, LLC	800 Taylor Street	Durham	NC	27201	FSBE				
Sun Source Technologies	4 Cherry Hill Rd	New Paltz	NY	12561	NYSBE				
SunEast Renewables LLC	d/b/a SunEast Fairways Solar LLC	Malvern	PA	19355	FSBE				
	d/b/a SunEast Flat Hill Solar LLC	Malvern	PA	19355	FSBE				
	d/b/a SunEast Grassy Knoll LLC	Malvern	PA	19355	FSBE				
	d/b/a SunEast Highview Solar LLC	Malvern	PA	19355	FSBE				
	d/b/a SunEast Hilltop Solar LLC	Malvern	PA	19355	FSBE				
	d/b/a SunEast Limestone Solar LLC	Malvern	PA	19355	FSBE				
	d/b/a SunEast Tapletop Solar LLC	Malvern	PA	19355	FSBE				
	d/b/a SunEast Valley Solar LLC	Malvern	PA	19355	FSBE				
Sustainable Endowment Institute	50 Milk Street, 15th Floor	Boston	MA	02109	FSBE				
Sustainable Energy Advantage, LLC	161 Worcester Rd., Ste 503	Framingham	MA	01701	FSBE				
T-REX Group, inc.	44 Wall St	New York	NY	10005	NYSBE				
Tech Valley Talent, LLC	PO Box 935587	Atlanta	GA	31193-5587	FSBE	X			
Tetra Tech, Inc.	6410 Enterprise Lane	Madison	WI	53719	FSBE				
The Cadmus Group, LLC	100 5th Ave., Ste 100	Waltham	MA	02451	FSBE				
The Nature Conservancy	250 Lawrence Hill Rd	Cold Springs Harbor	NY	11724	NYSBE				
The Research Foundation for the State	SUNY-ESF, ESF Outreach	Syracuse	NY	13210	NYSBE				
The Trustees of Columbia University	1210 Amsterdam Ave	New York	NY	10027-7003	NYSBE				
ThunderCat Technology LLC	1925 Isaac Newton Square	Reston	VA	20190	FSBE			X	
TRC Energy Services	21 Griffin Rd North	Windsor	CT	06095	FSBE				

NYSDERDA PERIODIC CONTRACTS APPROVAL REPORT: Contractor Addresses - 8/16/2020 to 12/15/2020

Contractor	SupplierAddress	SupplierCity	SupplierState	SupplierZipCode	Business Type	WBE	MBE	SDVOB	SBE
Troy Web Consulting, LLC	21 Westover Rd.	Troy	NY	12180	NYSBE				
University of Rochester	515 Hylan Building	Rochester	NY	14627	NYSBE				
Verizon Wireless	PO Box 408	Newark	NJ	07101-0489	FSBE				
Vermont Energy Investment Corporation	20 Winooski Falls Way	Winooski	VT	05404	FSBE				
Wadsworth Energy LLC	16378 Viansa Way, Unit 302	Naples	FL	34110	FSBE				
Willdan Energy Solutions	Wall Street Plaza	New York	NY	10005	NYSBE				
WSP USA Corp.	One Penn Plaza	New York	NY	10119	NYSBE				
Zones LLC	1102 15th St. SW. STE 102	Auburn	WA	98001	FSBE				

NYSERDA PERIODIC CONTRACTS APPROVAL REPORT: Anticipated Contracts - 8/16/2020 to 12/15/2020

Category	Type	Term > 1 Year	Contract ID	Contractor	Contract Description	Reason	Date	Anticipated Amount	Total Contract Amount
PCMT	Competitive	Y	30191	Abt Associates Inc.	Flex Energy Tech Analysis 2	Added New Tasks	11/09/2012	\$100,000	\$970,943
	Competitive	Y	46964	Luminate, LLC	Outside Technical and Eng. Srv	Added New Tasks	09/05/2014	\$35,000	\$115,761
	Competitive	Y	85025	Tech Valley Talent, LLC	RFP3143 Umbrella Agreement	Added New Tasks	12/18/2015	\$81,938	\$8,011,520
	Competitive	Y	107299	CLEAResult Consulting, Inc.	Phone Email & Web Support	Added New Tasks	11/28/2016	\$123,078	\$636,280
	Competitive	Y	107762	Rosenblum Property Services, LLC	STEP Property Mgmt Services	Added New Tasks	12/07/2016	\$24,600	\$939,065
	Competitive	Y	107771	CLEAResult Consulting, Inc.	Centralized Services & Support	Added New Tasks	12/08/2016	\$506,035	\$9,161,637
	Competitive	Y	117926	TRC Energy Services	Staff Augmentation Services	Added New Tasks	09/06/2017	\$1,734,434	\$10,693,031
	Competitive	Y	118163	D.L. English Consulting, Inc.	Indian Point Consultant	Added New Tasks	09/13/2017	\$50,000	\$406,475
	Competitive	Y	127557	Frontier Energy, Inc.	3695 TWO Umbrella Agreement	Exercising Option to Renew	06/04/2018	\$100,000	\$700,000
	Competitive	Y	134906	New York Power Authority,	RTEM Data Store	New Agreement	12/07/2018	\$1,500,000	\$1,500,000
	Competitive	Y	137240	EME Consulting Engineering Group, LLC	SA.038A_TWO #7 - New Con	Added New Tasks	02/19/2019	\$268,938	\$798,543
	Competitive	Y	155547	Green Light New York, Inc.	Energy Efficiency Training TWO	Added New Tasks	07/08/2020	\$150,000	\$579,822
	Competitive	Y	155706	Joseph R Chimera	Ops and Maintenance	Added New Tasks	07/13/2020	\$800,000	\$1,500,000
	Competitive	Y	156228	The Research Foundation for the State	Low-Cost AQ Sensors	New Agreement	07/27/2020	\$544,569	\$544,569
	Competitive	Y	161130	The Cadmus Group, LLC	TWO #10 Climate Facilitation	New Agreement	11/19/2020	\$925,672	\$925,672
	Competitive	Y	161199	New Buildings Institute, Inc.	TWO #2 Bldg Elec Roadmap Writi	New Agreement	11/23/2020	\$250,000	\$250,000
	Competitive	Y	161828	Gartner Inc.	Gartner 2021	New Agreement	12/09/2020	\$39,164	\$39,164
	Competitive	Y	161831	BW Research Partnership	TWO# 2 JTWG Jobs Study	New Agreement	12/10/2020	\$300,000	\$300,000
	Competitive	Y	161973	Randstad North America, Inc.	PS.038_NYGB Analyst	Added New Tasks	12/14/2020	\$199,095	\$199,095
	Competitive	Y	162057	American Society of Heating,Refrigeratin	ASHRAE - EPE Team Support TWO	New Agreement	12/15/2020	\$105,000	\$105,000
	Competitive	Y	ADH0014924	TRC Energy Services	SA.041_TWO#14 - NCP PM	New Agreement	11/30/2020	\$419,522	\$419,522
	Discretionary	Y	124007	Concur Technologies, Inc.	2018-2020 Concur annual cost	New Agreement	03/01/2018	\$40,000	\$79,700
	Discretionary	Y	138377	Proenergy Consulting LLC	NEW YORK GREEN BANK	Added New Tasks	03/27/2019	\$60,000	\$160,000
	Discretionary	Y	141211	Honeywell International Inc.	SQA HPwES/EmPower in LI	New Agreement	06/10/2019	\$25,000	\$50,000
	Discretionary	Y	151289	USGS National Center MS270	Biological Recovery	New Agreement	02/12/2020	\$49,600	\$49,600
	Discretionary	Y	159163	Allison van Hee	Contractor to NY Green Bank	New Agreement	10/05/2020	\$50,000	\$50,000
	Discretionary	Y	161238	Walter Snyder Printer, Inc.	External Program Printing	New Agreement	11/24/2020	\$30,000	\$30,000
	Discretionary	Y	161240	Benchmark Printing, Inc.	External Program Printing	New Agreement	11/24/2020	\$8,000	\$8,000
	Discretionary	Y	161296	Fort Orange Press Incorporated	Program External Printing	New Agreement	11/24/2020	\$5,000	\$5,000
	Discretionary	Y	161298	Northco Products, Inc.	Program External Printing	New Agreement	11/24/2020	\$12,000	\$12,000
	Discretionary	Y	161301	Dowd-Witbeck Printing Corp.	Program External Printing	New Agreement	11/24/2020	\$12,000	\$12,000
	Discretionary	Y	161970	Caroline Hazard	SFR Consulting Project Support	New Agreement	12/11/2020	\$350,000	\$350,000

NYSERDA PERIODIC CONTRACTS APPROVAL REPORT: Anticipated Contracts - 8/16/2020 to 12/15/2020

Category	Type	Term > 1 Year	Contract ID	Contractor	Contract Description	Reason	Date	Anticipated Amount	Total Contract Amount
PCMT	Discretionary	Y	161974	Low-Level Radioactive Waste Forum, Inc.	LLRW Forum Membership Fee 2021	New Agreement	12/14/2020	\$5,000	\$5,000
	Discretionary	Y	162054	HPDC Energy LLC	Affordable housing strategy	New Agreement	12/15/2020	\$499,920	\$499,920
	Discretionary	Y	162058	Tech Valley Talent, LLC	SecureAuth Renewal 2021-2022	New Agreement	12/15/2020	\$41,949	\$41,949
PGRM	Competitive	Y	37382	TRC Energy Services	Technical Review and Program S	Exercising Option to Renew	11/15/2013	\$113,425	\$3,899,569
	Competitive	Y	122285B	Sky High Solar, LLC	RESRFP17-1	Change in Contact Terms	12/15/2020	\$22,362,290	\$22,362,290
	Competitive	Y	129293	Consolidated Edison Company	P4P Con Ed MOU and NDA	New Agreement	07/26/2018	\$8,106,666	\$8,106,666
	Competitive	Y	135614	L&S Energy Services, Inc.	L&S GJGNY Energy Audits	Added New Tasks	12/28/2018	\$1,100,331	\$3,505,981
	Competitive	Y	156059	Abundant Solar Power Inc.	NY Sun	Added New Tasks	07/22/2020	\$3,288,740	\$3,288,740
	Non-Competitive	Y	110474	Long Island High Technology Incubator	PON3413 Clean Energy Incubator	Extend Contract Term	02/17/2017	\$300,000	\$1,800,000
	Non-Competitive	Y	124254	Launch New York, Inc.	Launch NY ECO Incubator	Extend Contract Term	03/09/2018	\$800,000	\$2,600,000
Grand Total								\$45,516,966	\$85,712,515

NYSERDA PERIODIC CONTRACTS APPROVAL REPORT: Section 1
Summary - 8/16/2020 to 12/15/2020

Category	Report Type	Type	Count of Contracts	Committed this period
PGRM	Program	Competitive	969	\$994,333,253
		Discretionary	9	\$582,007
		Non-Competitive	5	\$1,272,986
Total			983	\$996,188,246
Grand Total			983	\$996,188,246

Section 1 Summary - Percentages

% Contract Counts Competitively

% of \$Committed this period Competitively

99.49%	99.87%
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NYSERDA PERIODIC PROGRAM REPORT

8/16/2020 to 12/15/2020

Table: All Market Focus Committed this Period

MarketFocus	Count of Contracts	Committed this period
Non-CEF	2	\$131,724
Agriculture	4	\$18,914
Anaerobic Digesters	5	\$1,583,450
Building Innovation	4	\$1,296,694
Clean Heating and Cooling	11	\$1,761,978
Clean Trans (Innov & Research)	43	\$7,563,643
Codes	3	\$73,354
Combined Heat & Power	3	\$1,571,026
Commercial	139	\$14,033,005
Communities and Local Governme	9	\$4,533,159
Energy & EnvironmentalAnalysis	1	\$44,000
Energy Storage	103	\$51,809,687
Energy-RItd Environmental Res	3	\$657,681
Evaluation	1	\$50,000
Green Jobs-Green NY	1	\$200,000
Grid Modernization	5	\$1,389,926
Industrial	26	\$6,913,473
Innovation	3	\$610,136
Large Scale Renewables	33	\$718,332,051
LMI	74	\$11,813,443
Low Income	1	\$50,061

NYSERDA PERIODIC PROGRAM REPORT

8/16/2020 to 12/15/2020

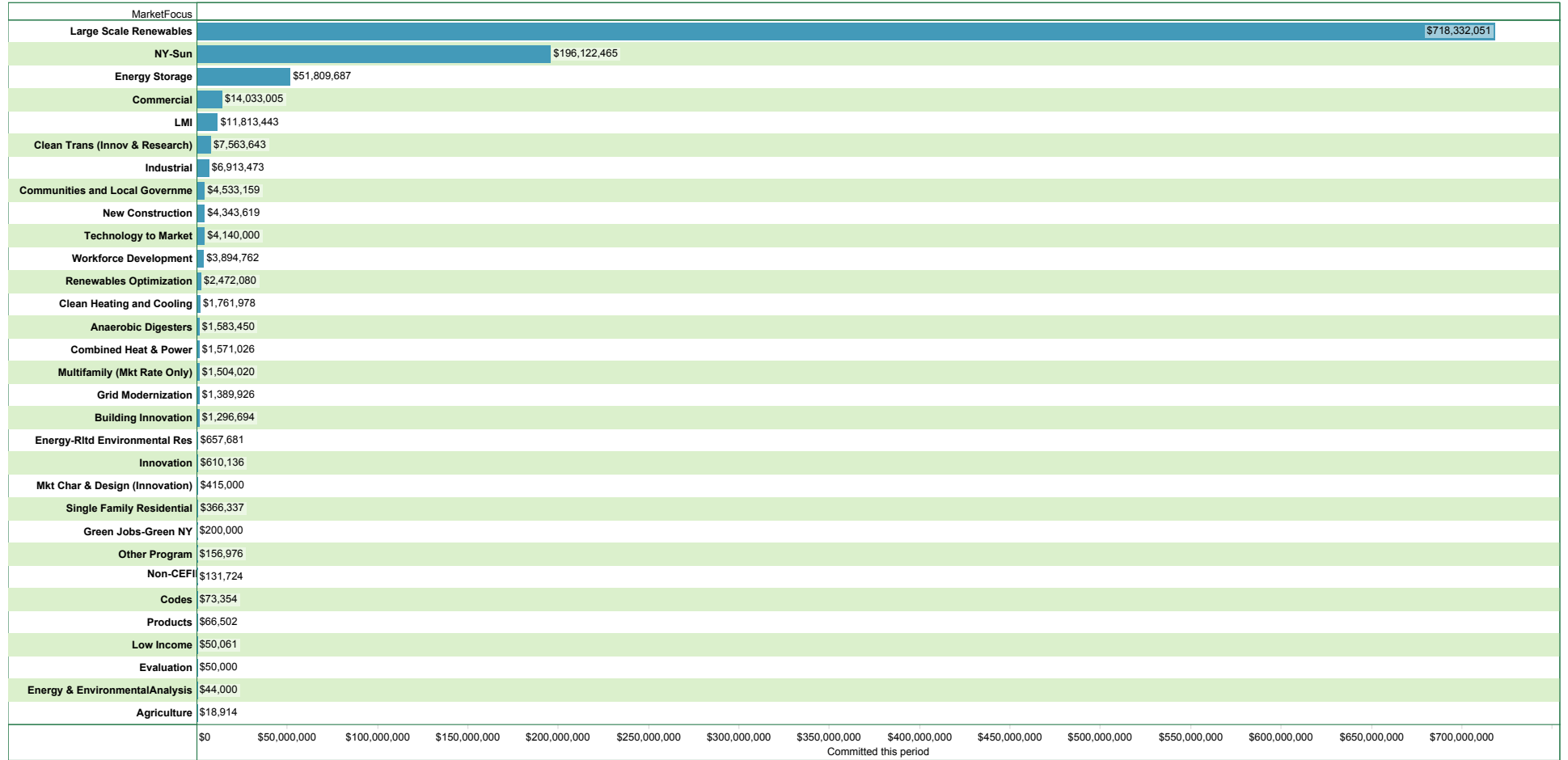
Table: All Market Focus Committed this Period

MarketFocus	Count of Contracts	Committed this period
Mkt Char & Design (Innovation)	5	\$415,000
Multifamily (Mkt Rate Only)	53	\$1,504,020
New Construction	39	\$4,343,619
NY-Sun	506	\$196,122,465
Other Program	1	\$156,976
Products	2	\$66,502
Renewables Optimization	3	\$2,472,080
Single Family Residential	3	\$366,337
Technology to Market	10	\$4,140,000
Workforce Development	123	\$3,894,762
Grand Total	1,219	\$1,037,919,166

NYSDERDA PERIODIC PROGRAM REPORT

8/16/2020 to 12/15/2020

Graph: All Market Focus Committed this Period



NYSDERDA PERIODIC PROGRAM REPORT
8/16/2020 to 12/15/2020
Table: By REDC Region and County

REDC Region	County	Count of Contracts	Committed this period
Capital Region	Albany	30	\$52,995,989
	Columbia	13	\$3,811,098
	Greene	8	\$1,161,110
	Rensselaer	12	\$20,248,577
	Saratoga	19	\$17,883,713
	Schenectady	3	\$1,438,725
	Warren	5	\$164,265
	Washington	8	\$20,117,218
	Total	98	\$117,820,695
Central New York	Cayuga	8	\$2,608,279
	Cortland	5	\$4,195,511
	Madison	10	\$11,509,290
	Onondaga	38	\$15,898,301
	Oswego	5	\$1,939,396
	Total	66	\$36,150,777
Finger Lakes	Genesee	2	\$58,184
	Livingston	17	\$12,476,345
	Monroe	48	\$7,785,260
	Ontario	15	\$3,387,383
	Orleans	4	\$516,663
	Seneca	8	\$3,358,123

NYSERDA PERIODIC PROGRAM REPORT
8/16/2020 to 12/15/2020
Table: By REDC Region and County

REDC Region	County	Count of Contracts	Committed this period
Finger Lakes	Wayne	10	\$743,613
	Wyoming	3	\$10,470,588
	Yates	2	\$2,282,938
	Total	109	\$41,079,098
Long Island	Nassau	47	\$1,277,290
	Suffolk	53	\$1,258,453
	Total	100	\$2,535,743
Mid-Hudson	Dutchess	29	\$1,181,660
	Orange	27	\$6,685,050
	Putnam	12	\$721,204
	Rockland	20	\$903,589
	Sullivan	4	\$24,507
	Ulster	24	\$1,794,422
	Westchester	79	\$16,926,129
	Total	195	\$28,236,561
Mohawk Valley	Fulton	2	\$248,609
	Herkimer	2	\$22,759,317
	Montgomery	8	\$44,792,558
	Oneida	32	\$2,408,581
	Otsego	4	\$42,594
	Schoharie	3	\$18,567

NYSERDA PERIODIC PROGRAM REPORT
8/16/2020 to 12/15/2020
Table: By REDC Region and County

REDC Region	County	Count of Contracts	Committed this period
Mohawk Valley	Total	51	\$70,270,226
New York City	Bronx	57	\$4,553,070
	Kings	73	\$12,666,127
	New York	131	\$14,644,570
	Queens	46	\$7,679,768
	Richmond	9	\$12,977,308
	Total	316	\$52,520,843
North Country	Clinton	4	\$1,015,894
	Essex	6	\$43,172
	Franklin	3	\$2,261,689
	Jefferson	21	\$101,740,882
	Lewis	6	\$7,177,489
	St. Lawrence	12	\$21,663,851
	Total	52	\$133,902,976
Southern Tier	Broome	9	\$174,412,880
	Chemung	13	\$930,011
	Chenango	4	\$137,993,496
	Steuben	5	\$960,330
	Tioga	4	\$15,039,879
	Tompkins	18	\$2,932,672
	Total	53	\$332,269,268

NYSERDA PERIODIC PROGRAM REPORT
8/16/2020 to 12/15/2020
Table: By REDC Region and County

REDC Region	County	Count of Contracts	Committed this period
Statewide	STATEWIDE	107	\$53,924,887
	Total	107	\$53,924,887
Western New York	Allegany	9	\$8,530,736
	Cattaraugus	10	\$146,439,398
	Chautauqua	9	\$1,837,209
	Erie	21	\$4,200,215
	Niagara	17	\$8,200,533
	Total	66	\$169,208,091
Grand Total		1,213	\$1,037,919,166

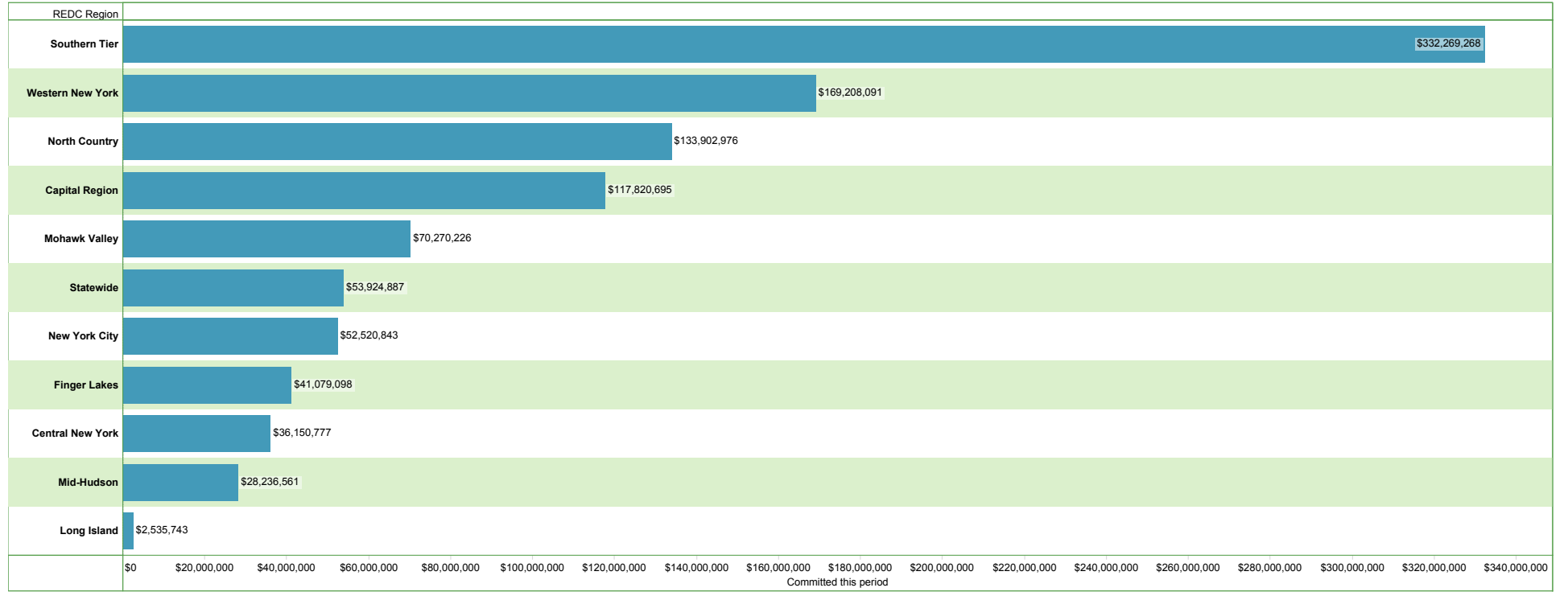
NYSDA PERIODIC PROGRAM REPORT
8/16/2020 to 12/15/2020
Table: By Electric Utility

Electric Utility	Count of Contracts	Committed this period
Central Hudson Gas and Electric	76	\$7,691,267
Consolidated Edison	385	\$69,378,767
Long Island Power Authority	101	\$2,572,493
Municipal Utilities	5	\$3,046,278
National Grid	314	\$410,050,178
NYS Electric and Gas	118	\$475,248,805
Orange and Rockland Utilities	40	\$4,093,124
Rochester Gas and Electric	63	\$11,913,369
Statewide	107	\$53,924,887
Grand Total	1,210	\$1,037,919,166

NYSDA PERIODIC PROGRAM REPORT

8/16/2020 to 12/15/2020

Graph: By REDC Region



Resolution No. ____

RESOLVED, that the Periodic Contracts Report, covering the period August 16, 2020 through December 15, 2020, as presented at this meeting, including but not limited to the contracts identified therein which have been, or are expected to be, executed and which do have, or are expected to have, a period of performance in excess of one year, is hereby approved in accordance with Public Authorities Law Section 2879.