NEW YORK STATE | NYSERDA
New York State Energy Research and Development Authority

50 YEARS 1975-2025

Toward a Clean Energy Future:
A Strategic Outlook

2025–2028

TABLE OF CONTENTS

NYSERDA AND ITS CONTEXT

50 YEARS 1975-2025

For 50 years, the New York State Energy Research and Development Authority (NYSERDA) has been at the forefront of advancing New York's clean energy future.

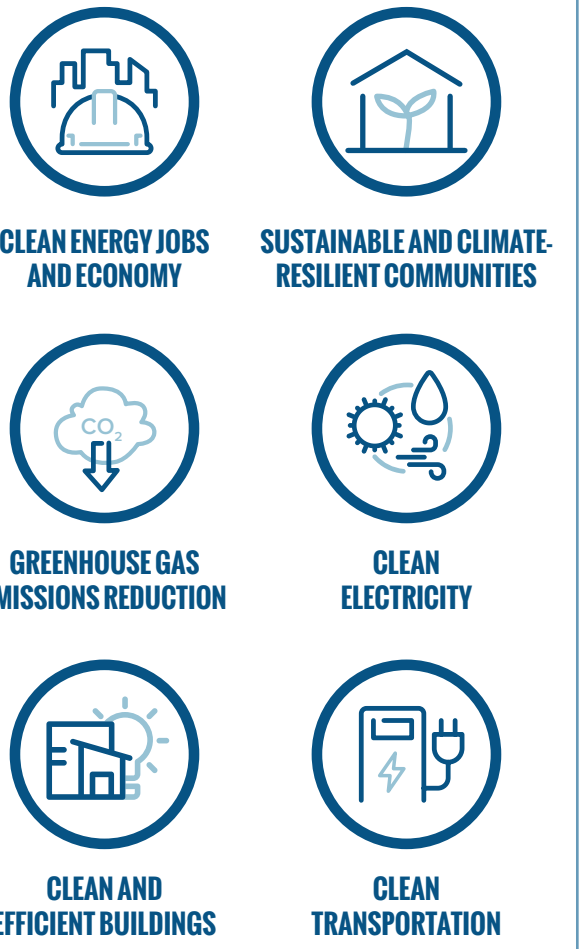
Since its founding in 1975, NYSERDA has worked to promote energy technology innovation, energy efficiency and resource diversity — bringing environmental and economic benefits across the State's communities. As technologies and policies evolve, and as the urgency of climate action grows, NYSERDA has continued to adapt to meet the needs of New Yorkers and remains committed to driving innovation and investment while serving as an objective source of information, energy planning, and technical expertise.

With five decades of experience operating under nine different U.S. presidents and seven New York State governors, NYSERDA has continuously adapted to shifting market conditions and evolving federal and State priorities. In a world shaped by global challenges such as inflation, high interest rates, supply chain disruptions, and international conflict, NYSERDA remains committed to being a source of stability, accuracy, and reliability for communities, businesses, and partners across the State.

In addition to providing solutions that help consumers manage their energy costs, NYSERDA is working to advance job growth and economic development, public health, equity and inclusivity, and community resilience. Collectively, our programs are building a clean, reliable, and affordable energy system for all New Yorkers.

This Strategic Outlook outlines NYSERDA's plans for the next three years to contribute to New York's progress toward a more sustainable economy. These efforts are organized around NYSERDA's six mission outcomes and guided by NYSERDA's Mission, Vision, and Promise. Sections throughout this document provide details on the role of the forthcoming State Energy Plan and corresponding key NYSERDA programs for each of the six mission outcomes.

SIX MISSION OUTCOMES



Further information about programs and other resources referenced throughout this document can be found on NYSERDA's website, nyserda.ny.gov.

NYSERDA'S MISSION, VISION, AND PROMISE

Throughout our history, NYSERDA has continually evolved to meet the needs of the moment, adapting to new challenges and opportunities while staying true to our mission of serving New Yorkers. On the occasion of its milestone 50th year, NYSERDA has revisited and refined its Mission, Vision, and Promise — ensuring our work continues to align with the evolving opportunities and priorities of the people we serve.

Our Mission:

NYSERDA catalyzes New York's clean energy transition.

Our Vision:

Clean energy that supports a healthier and thriving future for all New Yorkers.

Our Promise:

NYSERDA serves New York State as a trusted and credible resource for energy information, policies, and programs, through objective analysis and planning, innovative solutions, and impactful investments that are valued by New York residents and businesses.

These foundational principles shape NYSERDA's efforts to bring our energy expertise and public service to every corner of the State.

NEW YORK STATE ENERGY PLAN

As Chair of the State Energy Planning Board, NYSERDA is leading the development of New York's next State Energy Plan (the Plan).

The Plan will incorporate a 2040 time horizon, and is designed to provide strategic direction for public and private sector investment decision making, while simultaneously informing NYSERDA's work going forward.

This comprehensive roadmap will support the development of a clean, resilient, and affordable energy system for all New Yorkers. The contents of the Plan will address meeting future energy needs and advancing economy-wide decarbonization, while balancing the reliability, resiliency, affordability, environmental and public health, and economic growth that New Yorkers deserve.

To guide State energy policy, the Plan takes a multi-disciplinary approach, evaluating the energy, environmental, economic, societal, and public health impacts of the changes in electricity, fuels, transportation, buildings, and related sectors.

By examining existing policies and recommending new actions, analyzing trends in energy markets, and assessing the development and uptake of new energy technologies, the Plan serves as a crucial resource for both decision-makers and the general public, charting the path to a clean, resilient, and affordable energy future.

Visit energyplan.ny.gov to learn more about the State Energy Plan process.

CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT

Signed into law in July 2019, the Climate Leadership and Community Protection Act (Climate Act) has laid the foundation for much of the work at NYSERDA and at other agencies tasked with contributing to New York State's transition to a clean energy economy.

The Climate Act sets out goals to reduce economy-wide greenhouse gas (GHG) emissions 40% by 2030 and 85% by 2050, and targets realization of a zero-emissions electrical grid by 2040.

It includes further sector-specific aims for distributed solar power, energy storage, offshore wind energy, building energy efficiency, and renewable energy.

A key component of the Climate Act is ensuring that at least 35% — with a goal of 40% — of the benefits of clean energy investments are directed toward Disadvantaged Communities.

This target aims to make the clean energy transition inclusive and equitable, providing economic opportunities, job creation, and environmental benefits to communities that have historically been overburdened by pollution.

NYSERDA'S ROLE AND STRATEGIES

To pursue our Mission, Vision, and Promise, and help achieve market transformation, NYSERDA deploys a range of targeted strategies that span the value chain and engage market participants from end-use customers and contractors to manufacturers and innovative product developers:

- **Data and analysis:** the provision of data, information, strategic guidance, best practices, roadmaps, trusted analysis, and education to improve market transparency and reduce costs
- **Innovation:** product development support and business model innovation to scale market adoption; proof of concept demonstrations to drive process and technology changes
- **Supply chain development** to increase product deployment efficiency and reduce costs
- **Workforce:** new and existing worker training and workforce development to ensure skill sets align with new technology and capacity needs
- **Deployment:** targeted resource deployment aimed at building confidence with residents, demonstrating demand, and challenging product solution providers to bring needed technology to market
- **Technical assistance** with respect to clean energy siting, interconnection, electrical grid optimization, industrial process efficiency, and more
- **Financing solutions** to reduce pre-development and first-cost risks to catalyze private capital investment
- **Policy, codes, and standards development** to send clear market signals and provide regulatory certainty

Of course, NYSERDA cannot do this alone. Our mission requires the development of strong, strategic partnerships, including:

Working in close partnership with other State agencies and authorities to drive toward operations with increased resiliency and reduced or eliminated emissions to build use cases for the private sector.

Coordinating with regional associations, other states, and the federal government to leverage mutual opportunities such as those related to transmission and supply chains.

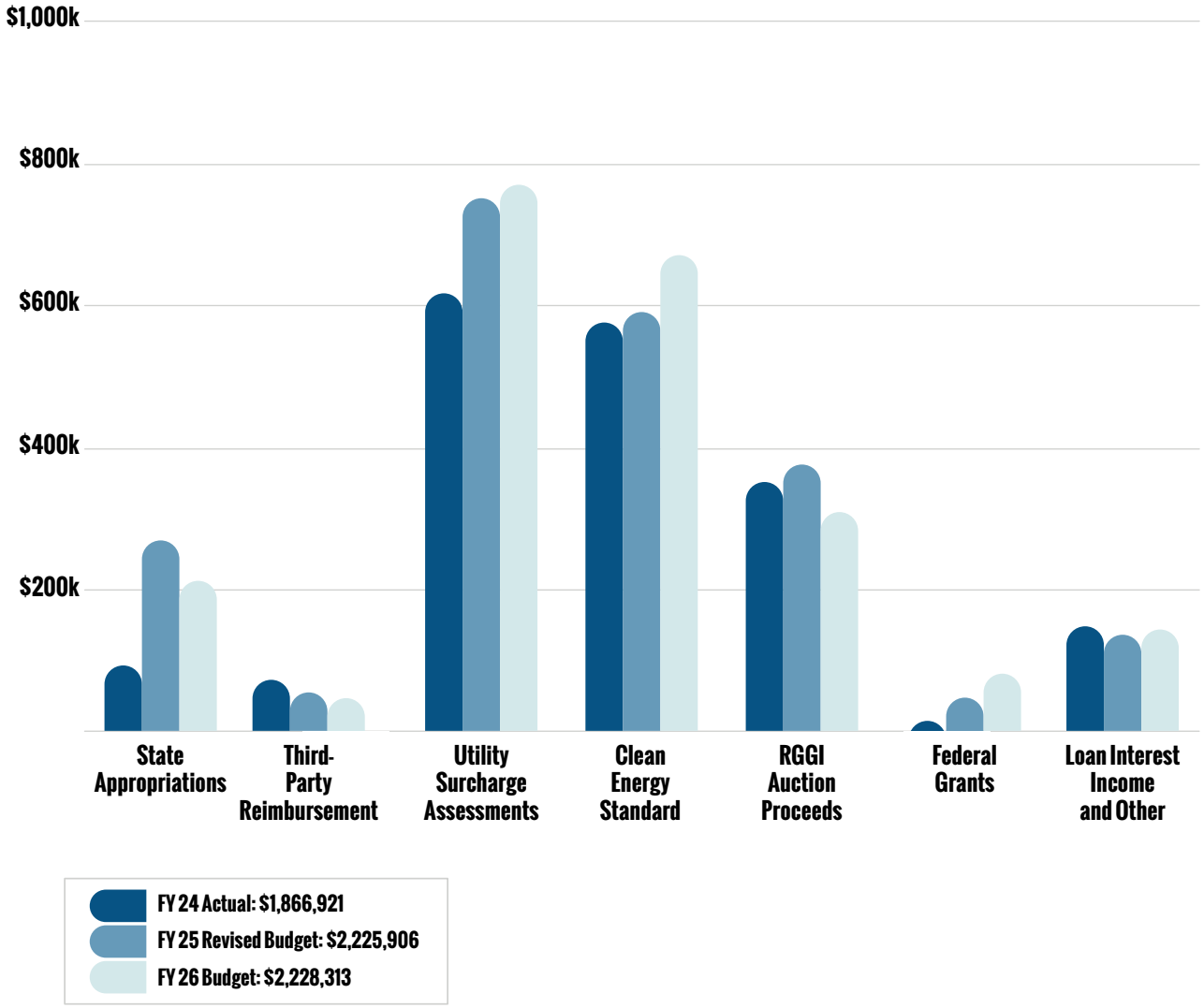
Enabling and encouraging communities, residents, and businesses to take local action on clean energy, climate, and resiliency.

Increasing engagement of frontline, climate-vulnerable communities to ensure their representation in decision-making and policymaking.

MAXIMIZING THE IMPACT OF STATE AND FEDERAL FUNDING

NYSERDA's work is funded by a combination of sources, including Orders issued by the Public Service Commission, the Regional Greenhouse Gas Initiative (RGGI), federal grants, and a small share of New York State budget appropriations. The approximate mix and scale of these is reflected below.

Funding by Revenue Source (Amount in Thousands)



NYSERDA is working to deliver over $1 billion in federal funding through programs administered by federal agencies.

NYSERDA tracks and responds to federal funding opportunities to ensure that New York State, local governments, individuals, businesses, Disadvantaged Communities, and other stakeholders can fully benefit from these investments, leveraging funds to lower costs, create jobs, reduce emissions, build resilient infrastructure, and improve public health.

In 2021 and 2022, the federal government passed a trio of laws — the Infrastructure Investment and Jobs Act (IIJA), the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act, and the Inflation Reduction Act (IRA) — that collectively approved the largest amount of federal funding, and many of the most consequential policies, to directly address climate and energy issues in our nation's history.

To maximize the benefits to New York, NYSERDA is working to deliver over $1 billion in federal funding from these programs.

Visit nyserda.ny.gov to view published annual reports and financial statements with details on NYSERDA's budget.

MISSION OUTCOMES

NYSERDA's work drives transformative change across the six mission outcomes, ensuring the State's energy transition delivers meaningful benefits to communities, businesses, and our economy while addressing the urgent priorities of climate change, energy affordability, and public health. Each of these six mission outcomes is discussed in more detail throughout this Strategic Outlook. In addition, three key themes of NYSERDA's responsibility apply across multiple mission outcomes and are accordingly raised in each such mission outcome.

CROSS-CUTTING OUTCOMES

CLEAN ENERGY JOBS AND ECONOMY

NYSERDA advances industry growth and workforce development and training programs to help New Yorkers access good jobs and share the benefits of the growing clean energy economy.

Micron and Global Foundries: Deliver job creation, economic growth, and environmental benefits with Micron's $100 billion investment in Onondaga County and Global Foundries' $11.6 billion investment in Saratoga County through New York's first-of-the-nation Green CHIPS program.

Energy Storage Supply Chain: Advance energy storage research, manufacturing, and workforce development across the Southern Tier, Finger Lakes, and Western New York — attracting new business and connecting local companies to growth opportunities.

NEW **P-12 Career Awareness:** Inspire young New Yorkers with accessible educational resources, professional development opportunities for educators, and experiential program funding while expanding the local talent pool for clean energy employers.

Apprenticeship and Pre-Apprenticeship Clean Energy Training: Expand access to high-quality, family-supporting, union job training programs while building a workforce to deploy a range of clean energy technologies.

SUSTAINABLE AND CLIMATE-RESILIENT COMMUNITIES

NYSERDA supports infrastructure improvements and investments in local solutions to help ensure New York's communities are resilient, affordable, and livable.

NYS Adaptation and Resiliency Plan: Mobilize the best available science and solutions to help New Yorkers adapt to and strengthen their resilience against a changing climate.

Clean Energy Communities: Empower local governments to implement cost-saving, job-creating, clean energy solutions.

Regional Clean Energy Hubs: Help local residents and businesses understand and pursue their own clean energy opportunities.

GREENHOUSE GAS EMISSIONS REDUCTION

NYSERDA leads efforts to reduce emissions in New York, helping to make New York's communities cleaner and healthier.

Regional Greenhouse Gas Initiative (RGGI): Collaborate with other regional states to limit carbon emissions from power plants and invest in emission-reduction and clean energy solutions.

New York Cap and Invest (NYCI): Develop a statewide emissions cap, improving public health while generating revenue to invest in energy affordability and emission-reducing programs.

Natural Gas System Transition: Guide the strategic downsizing of New York's gas system such that it ensures energy affordability, delivers workforce development, encourages fair cost allocation, and minimizes impacts on Disadvantaged Communities.

SECTOR-BASED OUTCOMES

CLEAN ELECTRICITY

NYSERDA helps New Yorkers power their homes and businesses affordably and reliably while reducing dependence on fossil fuels.

Champlain Hudson Power Express (CHPE): Deliver affordable, renewable hydropower from Quebec to New York City by 2026, bringing $3.5 billion in economic benefits to New Yorkers while creating nearly 1,400 family-sustaining union jobs during construction.

NY-Sun: Accelerate affordable and equitable distributed solar adoption through residential, commercial, and community solar projects, setting New York on a path to achieve its 10-gigawatt-by-2030 goal.

Large-Scale Resources: Continue to grow a strong pipeline of offshore and onshore wind, energy storage, and utility-scale solar deployments to deliver clean, reliable, and affordable energy to New York's homes and businesses.

NEW **Advanced Nuclear:** Develop a Master Plan for Responsible Advanced Nuclear Development in New York to examine the key issues and opportunities presented by these technologies for New York State.

CLEAN AND EFFICIENT BUILDINGS

NYSERDA works to expand access to healthier, more comfortable homes; lower energy bills for New Yorkers; and make New York's built environment modern and resilient.

EmPower+: Provide no-cost and discounted energy efficiency and electrification solutions that help income-eligible New Yorkers save energy and money, increase comfort, and upgrade their homes.

Empire Building Challenge: Advance the market for large building decarbonization through purposeful demonstrations in partnership with the real estate industry and solution providers.

Clean Heat for All Challenge: Help lead efforts to develop new technology solutions, such as window heat pump units, that can better serve the needs of existing multifamily buildings and accelerate the transition to clean heating and cooling sources.

CLEAN TRANSPORTATION

NYSERDA supports the adoption of cleaner, more cost-effective mobility options that reduce air pollution and improve public health for New Yorkers.

Electric School Buses: Support electric school bus fleets to navigate their transition to zero-emission alternatives, including covering up to 100% of the difference in cost between an electric bus and a diesel bus, as well as any charging infrastructure.

Drive Clean Rebate: Provide point-of-sale rebates of up to $2,000 for New Yorkers buying electric vehicles (EVs), leading to a reduction of approximately 450,000 metric tons of CO_2 emissions every year.

Charge Ready NY 2.0: Increase access to EV charging with rebates for workplaces, multifamily buildings, and municipalities that install Level 2 charging stations and promote EVs to their employees and tenants.

KEY THEMES

ENERGY AND CLIMATE EQUITY

NYSERDA embeds energy equity and climate justice into its programs and policies to ensure New York's frontline and historically marginalized communities benefit from a sustainable future.

NEW **NYSERDA's Energy and Climate Equity Strategy:** Prioritize communities to address historic inequities, design inclusive pathways for stakeholder input in policy and program design, shift investment to reduce burdens, and increase benefits to frontline communities.

Fossil Fuel Combustion Reduction and Replacement: Reduce reliance on fossil fuels for electricity generation, impacting air quality and public health by accelerating the deployment of clean energy generation and energy storage projects.

Affordable Home Energy Upgrades: Advance complementary initiatives, deepen community partnerships, and support programs to ensure equitable access to home upgrades to increase comfort and lower energy bills.

Clean Transportation Access: Expand access to clean transportation options in frontline communities to reduce emissions and improve local air quality.

CLIMATE RESILIENCY

NYSERDA works to prepare New York for the impacts of climate change that are already unavoidable based on past and current emissions.

Research and Analysis: Conduct detailed sector studies incorporating the latest resiliency design approaches and best practices to understand and reduce the impacts of a changing climate.

Strong Solicitation Standards: Require large-scale renewable energy and certain building-scale project proposals to consider and mitigate risks from climate hazards throughout the project's operational lifespan.

Building-Scale Resiliency: Identify opportunities to incorporate climate resiliency into programs, investments, and assets to support both decarbonization and climate resiliency goals at the building scale.

ENERGY INNOVATION

NYSERDA invests in emerging technologies, public-private partnerships, and cutting-edge research to deliver resiliency, affordability, job growth, and economic development to New Yorkers.

Grid Modernization: Develop innovative technologies and solutions through public/private partnerships to improve the grid's performance, meet future grid needs, and enable both existing and future technologies that increase grid flexibility and resiliency.

Building End-Use Applications: Improve the availability, performance, and affordability of alternative and emerging clean heating and cooling and façade solutions.

Electric Vehicle Integration: Invest in new solutions that minimize any impacts on the electric grid through advanced vehicle-grid interactions, enabling the deployment of EVs at scale and at a reasonable cost.

CLEAN ENERGY JOBS AND ECONOMY

NYSERDA is helping position New York State as an innovation, research, and manufacturing capital of clean technology to create thousands of jobs, establish the clean energy supply chain, and attract national and global investments.

With over 178,000 clean energy jobs across the State at the end of 2023 — and hundreds of thousands of additional new jobs to be created by Climate Act investments — New York's ambitious climate policies continue to drive economic opportunity and job creation. New York's clean energy businesses have continued to add workers at a faster pace than the State's overall workforce, with clean energy employment increasing by 5% from 2022 to 2023, compared to the 2% statewide average. Moreover, clean energy workers report higher wages and high rates of career satisfaction.

To build an inclusive clean energy economy and cultivate a just transition, NYSERDA, along with other State agencies and clean energy industry partners, will continue to develop a pipeline of skilled labor. In particular, emphasis will be placed on ensuring these economic opportunities are open to communities that have been historically disadvantaged and transitioning fossil-fuel workers. Additionally, NYSERDA will continue to prioritize working with unions to expand clean energy training for apprentices and journey workers and partnerships with direct-entry, registered pre-apprenticeship programs that lead to placement into apprenticeships.

If New York State is going to be a strong competitor in the national race to develop the clean energy supply chain, the State's economic development initiatives need to be strategic, aggressive, and send strong signals to the market that New York is open for business. The State has remained attractive to clean energy development thanks to its large and highly skilled clean energy workforce, as well as its support in fostering a clean energy innovation ecosystem.

STATE ENERGY PLAN

The new State Energy Plan will outline New York's strategy to grow its clean energy economy, support economic development, and create job opportunities while ensuring just and equitable transition for workers.

A workforce analysis will forecast the Plan's employment impacts and identify gaps and needed workforce assets. The Plan will highlight opportunities to expand workforce development programming to meet current and future needs and discuss ongoing collaboration across State agencies to implement these and other initiatives. It will also evaluate progress toward policy priorities that ensure high-quality clean energy jobs and promote a fair transition for workers.

Together, these insights will help ensure that New York's workforce is prepared to seize the opportunities of the clean energy economy.

The Plan will also outline New York's nation-leading clean energy innovation efforts to promote emerging technologies, lower costs of clean energy technologies, generate in-state jobs, and attract economic development. It will evaluate policies, programs, and funding mechanisms that support energy research, business growth, and market expansion while building partnerships between universities and industry leaders, as well as statewide and regional collaboratives.

Additionally, the Plan will highlight how New York can continue to strengthen its in-state supply chains to secure economic benefits and employment opportunities for New Yorkers.

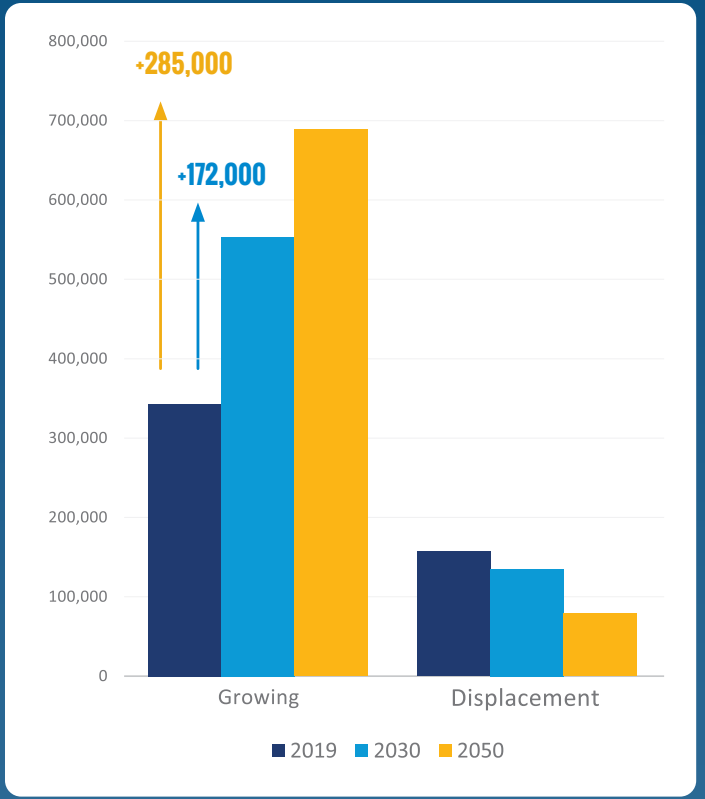
NEW YORK STATE CLIMATE JOBS STUDY

Based on independent research conducted for New York's Just Transition Working Group, Climate Act investments are expected to spur hundreds of thousands of new jobs in coming decades.

Expected clean energy job growth 2X greater than 2016–2020

More than half of new jobs will tackle building decarbonization

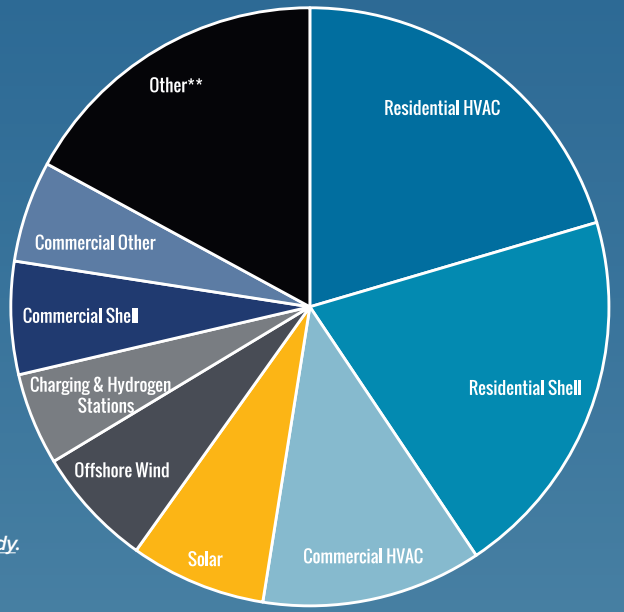
- Employment in growth sub-sectors increases by at least 172,000 jobs by 2030, a 55% increase in the workforce from 2019 to 2030.
- Employment grows in these sub-sectors by at least 285,000 jobs through 2050.
- In New York State, clean energy jobs, in their comparable sub-sectors, are expected to grow annually at more than twice the rate from 2021 through 2030 as the growth experienced between 2016 through 2020.
- By 2050, growth sub-sectors in New York State will reach nearly 600,000 jobs.



KEY EMPLOYMENT FINDINGS*

Sub-Sectoral Breakdown of 172,000 Jobs Added by 2030

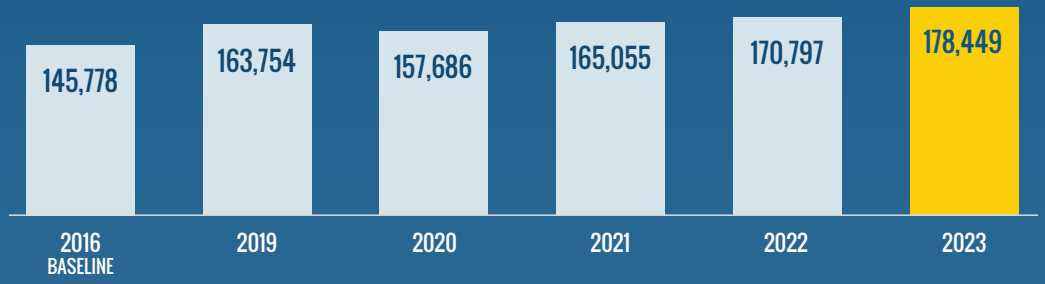
- Over half of the new jobs, in the growth sub-sectors, from 2019 to 2030, will be found in the buildings sub-sectors (shaded blue).
- The next largest growth sub-sectors are solar and offshore wind electricity generation, and electric vehicle charging and hydrogen fueling stations.



** Key employment findings derived from S2: LCF Scenario. Learn more by reading the New York State Just Transition Working Group Jobs Study.*
*** Includes Transmission, Storage, Other Generation, Bioenergy, Residential Other, Hydrogen, Onshore Wind, and Vehicle Manufacturing*

178,000
clean energy jobs in 2023
across New York State

ANNUAL CLEAN ENERGY EMPLOYMENT IN NEW YORK



New York's clean energy industry added 7,700 jobs between 2022 and 2023, the largest employment gain in any one year since clean energy jobs tracking began.

Clean energy businesses in New York added workers at a faster rate than the State's overall workforce and in greater numbers than neighboring states, matching the pace of clean energy growth nationwide. Employment growth was experienced across clean energy sectors, with clean and alternative fuels transportation growing by the fastest rate during this time.

The building decarbonization and energy efficiency sector added the most jobs and remains the largest source of clean energy jobs, employing more than half of all clean energy workers.

As New York continues to invest in workforce development initiatives and programs to increasing clean energy deployment and reduce emissions from buildings, transportation, and the electric grid, the clean energy industry is poised to continue expanding access to high-quality and family-sustaining jobs statewide.

CLEAN ENERGY EMPLOYMENT BY TECHNOLOGY
(NUMBER OF JOBS, DECEMBER 2023)

130k Building Decarbonization and Energy Efficiency
3% job increase*

27k Renewable Electric Power Generation
6% job increase*

16k Clean and Alternative Fuels Transportation
16% job increase*

2.9k Grid Modernization and Energy Storage
7% job increase*

2.6k Renewable Fuels
2% job decrease*

*Compared to 2022

Visit nyserda.ny.gov/clean-energy-jobs to read the latest New York State Clean Energy Industry Report.

HIGHLIGHTED PROGRAMS AND INITIATIVES FOR 2025–2028

ECONOMIC DEVELOPMENT

MICRON AND GLOBAL FOUNDRIES

The $100 billion Micron investment in Onondaga County and $11.6 billion Global Foundries investment in Saratoga County are transformational projects to the State in terms of jobs, wages, community growth, and sustainability. Investments made at manufacturing facilities as well as the surrounding communities will necessitate innovative approaches to reducing carbon emissions while growing the State's economy. Micron and Global Foundries participate in New York State's Green CHIPS program, a first-in-the-nation major economic development program administered by Empire State Development that incentivizes sustainability outcomes (such as the use of 100% clean, renewable electricity in participant manufacturing operations). As sustainability becomes a business imperative, more companies like Micron and Global Foundries can be attracted to New York State thanks to its rich renewable asset base, sustained clean energy investment horizon, and policies driving the clean energy economy.

SOUTHERN TIER, FINGER LAKES, AND WESTERN NEW YORK ENERGY STORAGE SUPPLY CHAIN

NYSERDA is actively participating in the New Energy New York (NENY) coalition which has been awarded more than $115 million in federal and State funds. In collaboration with NENY, the National Science Foundation's Upstate NY Energy Storage Engine is expanding initiatives in battery research, manufacturing, and workforce development in New York State. NENY will help New York and the U.S. meet the demand for domestic battery products by accelerating the battery technology development, innovation, and manufacturing ecosystem in the Southern Tier, Finger Lakes, Central, and Western New York regions. Specifically, NYSERDA will support and connect existing New York State manufacturers to supply chain opportunities, attract energy storage manufacturers to these regions and the State as a whole, and enhance the region's profile via marketing and site development.

SCALE FOR CLIMATE TECH

The Scale for Climate Tech program connects startups who are scaling products that lower greenhouse gases or reduce energy consumption with local supply chain partners, manufacturers, and suppliers — attracting new technologies to the State and prioritizing connections in underserved communities. To date, the program has supported 67 cohort companies that have manufactured over 35,000 climatetech product units, raised over $500 million in funds, earned over $50 million in revenue, and are 4 times faster to bring products to manufacturing stage compared to non-participants on average (17 months versus 68 months).

ENERGY AND CLIMATE EQUITY

Equity considerations are built into the core of NYSERDA's workforce development and training initiatives to support access to career and wealth creation opportunities for historically disadvantaged populations and a just transition for industries affected by the transition from fossil fuels.

To support these efforts, NYSERDA incorporates new labor and economic development provisions, including prevailing wage/project labor agreements; prioritization of minority- and women-owned business enterprises (MWBEs) and service-disabled veteran-owned businesses (SDVOBs); and Buy America provisions into its renewable procurements.

Additionally, NYSERDA provides technical tools and direct support for existing New York MWBEs, SDVOBs, and Small-to-Medium Enterprises to position them in their transition to this emerging industry by identifying their specific value proposition, new partners, and potential customers.

NYSERDA also leads by example through its focus on diversity, equity and inclusion across NYSERDA's internal policies and processes, following publication of its five-year Diversity, Equity, & Inclusion Strategic Plan in 2021.

ENERGY INNOVATION

NYSERDA's Innovation and Research portfolio supports the transition to a clean energy economy and helps to deliver job growth and affordability benefits for New Yorkers.

Through collaborations with DOE National Laboratories, academic institutions, and industry partners, the Innovation program supports next-generation technologies — ranging from advanced building systems and grid modernization solutions to hydrogen pilots and offshore wind.

This robust ecosystem includes over 650 climate technology small businesses, and NYSERDA's incubators and targeted entrepreneurial support have helped 374 companies create more than 1,700 jobs while attracting $1.85 billion in additional private and public investment.

These efforts underscore NYSERDA's vital role in catalyzing technology breakthroughs, driving down costs, and ensuring that New York remains at the forefront of clean energy research, economic growth, and environmental leadership.

WORKFORCE DEVELOPMENT

BUILDING OPERATIONS AND MAINTENANCE TRAINING

NYSERDA is supporting training projects that create the educational strategy, on-site training framework, and tools needed to advance the skills of building operations and maintenance workers and to prepare new workers beyond conventional classroom training. To date, 88 projects totaling over $20 million have been awarded to train and upskill approximately 8,000 building operations and maintenance workers. Approximately 45% of the buildings whose operators have been trained through the program to date are located in Disadvantaged Communities.

ENERGY EFFICIENCY AND CLEAN TECHNOLOGY TRAINING FOR NEW AND EXISTING WORKERS

This initiative is designed to strengthen the pipeline of skilled talent for the clean energy labor market, focusing on energy efficiency, building electrification, large-scale renewables, energy storage, and electric vehicle charging station infrastructure. Projects funded through this program are intended to develop and/or deliver clean energy technical training and relevant education, hands-on experience, and apprenticeships, full-time jobs, or advanced formal training. The goal is to ensure that both new and existing workers, apprentices, journeypersons, and students, as applicable, have the skills, experience, and qualifications required to meet industry demand. To date, 66 projects have been awarded nearly $25 million to train and upskill more than 18,000 individuals.

APPRENTICESHIP AND PRE-APPRENTICESHIP CLEAN ENERGY TRAINING

This new initiative is designed to create and/or expand the capacity of existing direct entry pre-apprenticeship and registered apprenticeship programs as a pathway to family-supporting, high-quality jobs. NYSERDA expects to train up to 4,000 new and existing workers, with at least 50% of those trainees coming from a Disadvantaged Community or Priority Population through Registered Apprenticeships and Direct-Entry Pre-apprenticeships by 2025/2026. To date, eight projects have been awarded nearly $6 million to train more than 5,000 pre-apprentices, apprentices, and journey workers, including at least 50% from Disadvantaged Communities and priority populations, in a range of clean energy technology areas.

P-12 CAREER AWARENESS

This new initiative will advance clean energy career awareness that starts in P-12 schools. The strategy will include: (1) A web-based platform that contains freely accessible clean energy educational resources responsive to the needs of New York State students and teachers. (2) Professional development opportunities for New York educators to advance their understanding of clean energy in the State. (3) Funding to support summer, work-based, and/or experiential clean energy programming for New York State youth. Through a $13 million investment (with greater than half the investment in Disadvantaged Communities and/or High-Needs Schools), more than 30,000 New York State students will be beneficially impacted. These individuals may then pursue technical training or paid work experience through NYSERDA's existing capacity building and hiring support programs, which in turn will expand the pool of talent for clean energy employers looking to hire new workers.

SUSTAINABLE AND CLIMATE-RESILIENT COMMUNITIES

NYSERDA is helping to build a resilient and distributed energy system — and supportive social infrastructure — that can anticipate, absorb, adapt to, and recover quickly from a wide range of shocks and stresses.

With NYSERDA's support, New York State's power system is evolving from a vulnerable, centralized model to a more balanced, diversified, and digitalized network. Additional advancements in flexible, responsive resources, such as energy storage and building load flexibility, are underway to further strengthen our grid. However, the State must also ensure its infrastructure is prepared for the realities of a changing climate, including changing flood zones, sea level rise, storm surges, high windspeeds, severe hail, and extreme temperatures.

In addition to hosting the distributed energy resources that enable grid reliability and flexibility, our communities are showing how holistic, community-scale building efficiency and clean transportation projects can improve health outcomes, generate new economic opportunities, and strengthen local decision making and ownership. Recognizing the role State policy has played in perpetuating inequities faced by historically marginalized communities, NYSERDA is engaging with frontline communities, bringing their voices to the table, and ensuring equity in processes and outcomes for those disproportionately burdened by the current energy system.

New York State Communities

New York's communities are as diverse as New Yorkers themselves, spanning 935 towns, 62 cities, 528 villages, 62 counties, and 10 Indigenous Nations. More broadly, though, communities throughout the State have shared interests in preserving and expanding quality of life through affordable housing, education, cultural resources, job opportunities, clean air and water, and health and safety. The State's communities are essential partners in this clean energy transition and must be engaged in planning, coordination, and decisions that will impact generations to come.

STATE ENERGY PLAN

Building from the most recent New York State Climate Impacts Assessment, the State Energy Plan will synthesize the latest climate science and trends to provide insights into the impacts of climate change on New York's people, infrastructure, and natural resources as well as strategies to adapt and build resilience to those impacts.

The Plan will also assess the impacts of natural, climate-related, technological, and other threats to the State's current and future energy system, and discuss related emergency preparation, resilience, and response actions.

To support the promotion of sustainable, proactive local government planning, the Plan will explore smart growth strategies that can reduce energy use, expand clean energy adoption, and improve efficiency and public health.

The Plan will help guide New York's policies and programs that seek to promote environmental justice and ensuring that frontline communities equitably benefit from the State's clean energy transition. It will assess potential energy sector impacts on Disadvantaged Communities and discuss mechanisms to ensure fair treatment and meaningful involvement of all people in State energy-related decision making, policies, and programs. It will explore current and new actions to help improve the health, economic, and environmental well-being of Disadvantaged Communities.

By providing NYSERDA with a comprehensive understanding of climate risks, adaptation and resilience strategies, smart growth opportunities, and actions to support environmental justice, the Plan will help ensure all New Yorkers — especially those in frontline communities — benefit from a cleaner, more sustainable, and equitable energy future.

Visit nysclimateimpacts.org to read the latest New York State Climate Impacts Assessment.

HIGHLIGHTED PROGRAMS AND INITIATIVES FOR 2025–2028

NEW YORK STATE ADAPTATION AND RESILIENCY PLAN

Governor Hochul's 2024 State of the State committed NYSERDA, the Department of Environmental Conservation, the Department of State, and the Division of Homeland Security and Emergency Services, in partnership with other relevant agencies to develop a comprehensive statewide Climate Change Adaptation and Resiliency Plan. This effort will ensure State entities and localities can equitably adapt to climate change, including by assessing impacts on Disadvantaged Communities, ecosystems, infrastructure, and vulnerable economic sectors. This initiative will draw from foundational climate data provided through the New York State Climate Impacts Assessment (led and funded by NYSERDA and updated in 2024) as well as draw from lessons learned from the State's first broad-scale adaptation planning effort through the Extreme Heat Action Plan published in 2024.

CLEAN ENERGY COMMUNITIES

The Clean Energy Communities initiative, in conjunction with Department of Environmental Conservation's Climate Smart Communities, recognizes and rewards communities for implementing clean energy and climate actions that save taxpayer dollars, create jobs, and improve the environment. It also provides tools, technical assistance, and local capacity support to address the challenges within resource-constrained local governments and communities. 2024 witnessed record participation in the Clean Energy Communities program, with over 900 communities actively participating by completing almost 1,500 high impact actions.

REGIONAL CLEAN ENERGY HUBS

The Regional Clean Energy Hubs (Hubs) were established in 2022 and are a network of trusted, knowledgeable, community-based organizations in and from the regions they serve. Twelve organizations currently serve as Hubs — one in each of the economic development regions of the State and three in New York City. Each Hub serves as a trusted local advisor to help residents understand and deploy energy efficiency, building electrification, renewable energy, and clean transportation solutions that can benefit them and their community. The Hubs:

- Provide residents and small businesses with information about utility, NYSERDA, and other building electrification, energy efficiency, and clean energy opportunities.
- Assist with applications.
- Provide energy literacy, such as explaining how to understand an electric bill and linking residents to workforce development opportunities.
- Work with residents on local projects and clean energy community campaigns.

ENERGY AND CLIMATE EQUITY

NYSERDA has developed and is implementing a comprehensive Energy and Climate Equity Strategy to ensure processes are inclusive, access to programs and resources are streamlined, and emerging environmental/climate justice and equity issues are addressed as they appear. The three pillars of this strategy are:

Structural Equity: Changes to State policy and operations that result in the intentional prioritization of frontline communities to repair historic disinvestment.

Procedural Equity: Designing inclusive pathways for meaningful stakeholder input to help shape NYSERDA decisions that impact their lives.

Distributional Equity: Foundational shifts in NYSERDA investment and programs to reduce burdens and increase benefits to frontline communities.

Through our structural and procedural equity work, NYSERDA is drawing on the lived experience and expertise of historically marginalized communities to inform NYSERDA programs and initiatives and shift clean energy investments toward benefiting frontline communities. These efforts meaningfully contribute to the achievement of NYSERDA's goals and strategies through our participation in collaborations like the Climate Justice Working Group, a body comprised of environmental justice groups and New York State agencies that are currently revising the definition of Disadvantaged Communities.

NYSERDA has also formed and actively participates in the Energy Equity Collaborative, a co-governed advisory body consisting of financially compensated community-based organizations representative of Disadvantaged Communities and NYSERDA staff in coordination with other New York State agencies. The mission and focus of the Collaborative and its work is to address environmental/climate justice and energy equity issues through community engagement in development of equitable program and policy design.

GREENHOUSE GAS EMISSIONS REDUCTION

NYSERDA is leading a wide range of initiatives that are helping to reduce greenhouse gas emissions, mitigate the impacts of climate change, and support a healthier future for all New Yorkers.

NYSERDA's work contributes to greenhouse gas (GHG) emissions reductions in New York through the full range of its market-transforming clean energy programs discussed in other sections of this Strategic Outlook.

In addition, decarbonization efforts include programs that set emissions caps and price signals for markets to move toward lower and zero-emission alternatives (such as the Regional Greenhouse Gas Initiative or "RGGI"), as well as other initiatives that deliver emission reductions across multiple sectors (such as the Sustainable Future Program — a $1 billion climate commitment in Governor Hochul's 2025–2026 proposed budget designed to create jobs, improve affordability, and cut down on harmful pollution), and foundational action on research, development and demonstration of innovative technologies that could contribute to the clean energy transition in all sectors such as hydrogen and alternative fuels.

By doing its part to cut New York's GHG emissions that cause climate change, New York State is also helping to inspire similar market-moving activities in many other jurisdictions.

STATE ENERGY PLAN

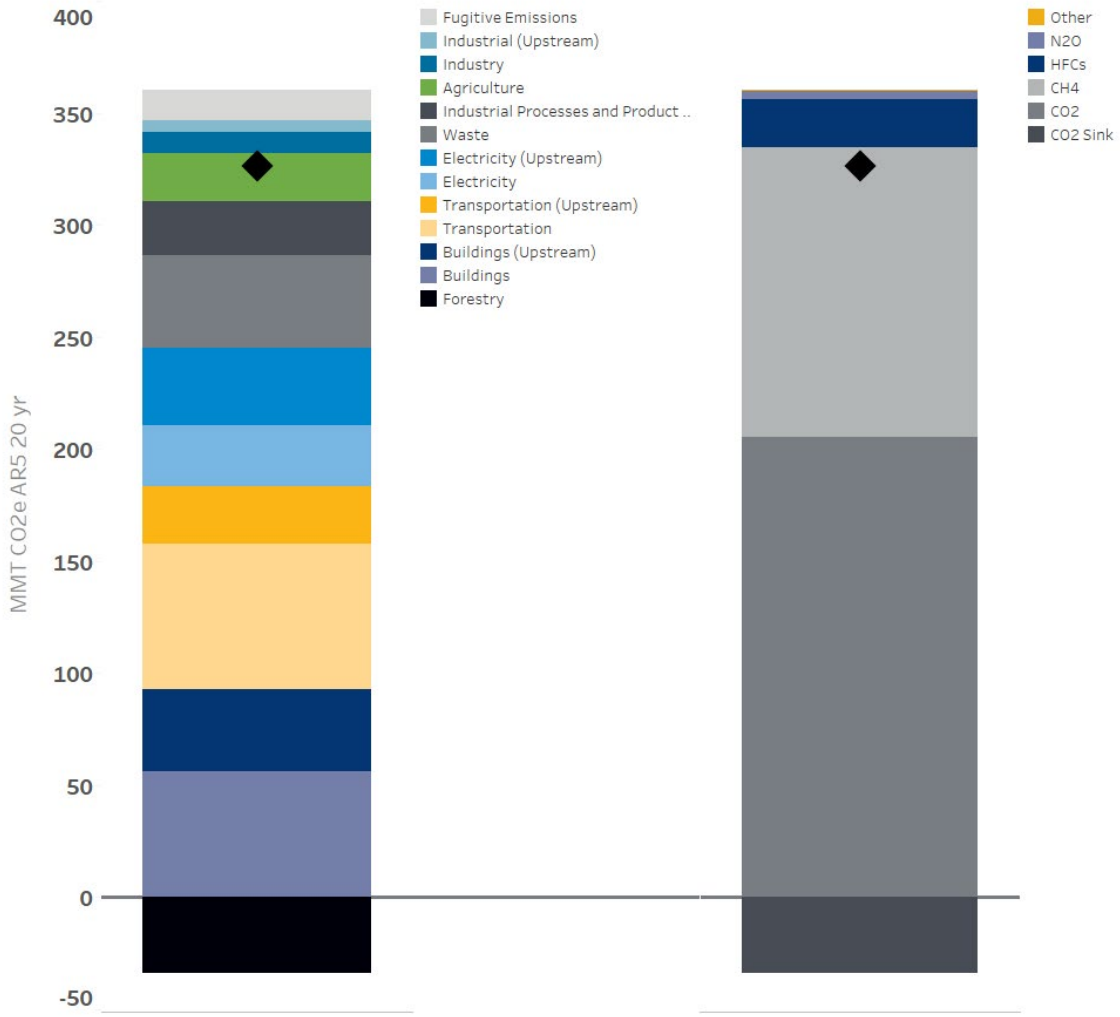
The new State Energy Plan will support New York's GHG reduction efforts by providing insights into the State's current and projected emissions, energy markets, and potential pathways to decarbonization. This will include a forecast of GHG emissions statewide and across sectors, along with an assessment of historical, current, and projected trends in energy demand, production, and infrastructure.

Across multiple sectors, the Plan will guide a managed, strategic, and affordable transition from reliance on fossil fuels to a clean energy economy. It will chart a transformation in the way that New York's power sector and consumers generate, deliver, and use increasingly clean electricity across the residential, commercial, industrial, and transportation sectors.

The Plan will also assess the strategic role for low-carbon alternative fuels such as hydrogen, renewable natural gas, biogas, biofuels, and other bio-based fuel and synthetic fuel in our energy system. It will examine the GHG emissions and the air quality and health impacts of these alternative fuels, with particular attention to their potential impact on Disadvantaged Communities.

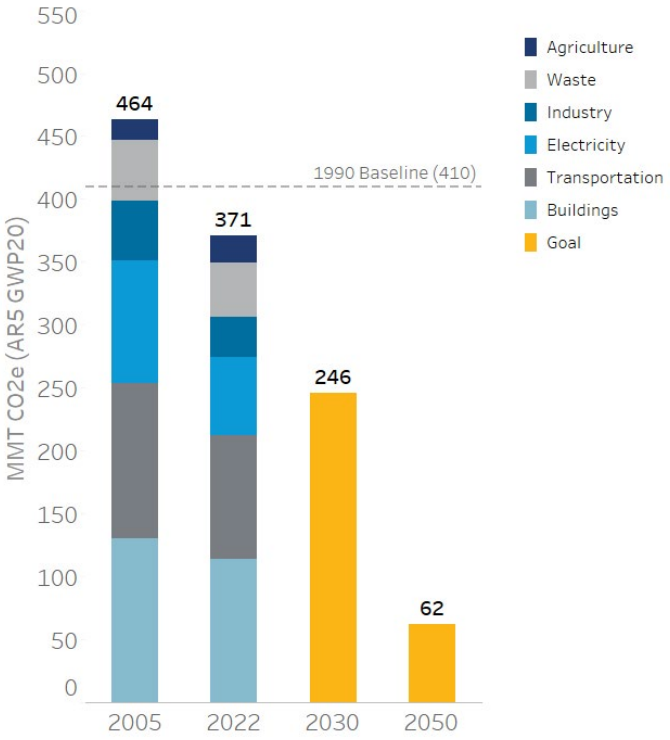
This comprehensive analysis will help ensure New York's safe, reliable, and resilient energy transition by informing supportive policy actions and timelines.

CURRENT ESTIMATED 2022 GREENHOUSE GAS EMISSIONS BY SECTOR AND TYPE



2050 TARGET: 85% REDUCTION

Relative to 1990 emissions baseline



NOTE: The 1990 baseline and the 2030 and 2050 values align with Department of Environmental Conservation's (DEC's) Statewide Greenhouse Gas (GHG) Emission Limits regulation (Part 496). Due to ongoing methodological updates, this 1990 value differs from the value published in DEC's annual GHG Emissions Report. In addition, all emissions inventory numbers were updated by DEC at the end of 2021 to incorporate an emissions accounting methodology that aligns with the Climate Act. This update put New York's baseline of emissions at roughly 70% higher than pre-Climate Act accounting, due primarily to the changes in accounting for upstream emissions and global warming potential.

HIGHLIGHTED PROGRAMS AND INITIATIVES FOR 2025–2028

REGIONAL GREENHOUSE GAS INITIATIVE (RGGI)

Under the RGGI program, regional states have come together to establish a regional cap on carbon dioxide emissions from power plants. Participating states sell emission allowances at quarterly auctions in proportion to their respective share of the regional cap. NYSERDA invests New York's share of the resulting revenue into programs and initiatives that support GHG emissions reductions and clean energy. The participating states are currently undertaking a periodic review that includes technical analysis and consideration of public comments.

NEW YORK CAP-AND-INVEST (NYCI)

NYCI would enact an economy-wide greenhouse gas emissions cap for the State that will gradually decrease over time, requiring obligated entities to purchase emission allowances, providing the State substantial revenue to be spent on affordability benefits and investing in emission reducing efforts to ease the transition to cleaner technology. In 2024, The Department of Environmental Conservation and NYSERDA published preproposal materials and associated comprehensive analysis quantifying the expected benefits from the program in terms of improved health outcomes — including reduced mortality and fewer heart attacks and asthma attacks — and an estimated 30,000 new jobs by 2030. In 2025, Governor Hochul announced that the next stage in the advancement of this program will focus on the Department of Environmental Conservation's Mandatory Greenhouse Gas Reporting Rule, a draft of which was released for public comment in March of that year. NYSERDA's role in delivering the program would include auctioning allowances and investing proceeds to accelerate New York's clean energy transition.

SUSTAINABLE FUTURE PROGRAM

In her 2025 State of the State proposal, Governor Hochul outlined the creation of a new Sustainable Future program, committing $1 billion to investments in clean energy and energy transition. If included in the Legislature's final budget, the program would represent the largest single investment in the energy transition in State budget history, supporting investments such as thermal energy networks, vehicle electrification, and other measures that cut emissions, create new job opportunities, and support benefits for New Yorkers across the State.

EXECUTIVE ORDER 22

Recognizing the importance of a lead-by-example role for State agencies in the clean energy transition, this Executive Order, adopted in 2022, sets a range of targets across electricity use and energy use in transport and building operations, renewable electricity, green procurement, waste diversion, climate resiliency, and other sustainability goals to be achieved by State agencies and authorities in their operations. NYSERDA serves as co-chair of the Green NY Council, which is a multi-agency group set up by the Executive Order to help State entities to continue making progress towards these targets and directives. Among many activities as co-chair, NYSERDA recently partnered with the Office of General Services (OGS) and New York Power Authority (NYPA) to release a new interim design guide for State buildings. This first-of-its-kind guide standardizes recommendations for increasing energy efficiency, designing for zero emissions, and designing for climate resiliency in State buildings. This will ensure State investments are reducing emissions and serving New Yorkers well into the future and will begin integration into State projects in 2025.

AIR QUALITY ANALYSIS

NYSERDA has significantly strengthened and will seek to continue to enhance its capability to estimate potential changes in air quality in response to energy policy and ensuing public health outcomes by evaluating health effects throughout New York State, including Disadvantaged Communities. These improved modeling approaches have been demonstrated in analyses supporting development of the New York Cap-and-Invest program and in the Climate Act Disadvantaged Communities Investment and Benefits Reporting Guidance.

NATURAL GAS SYSTEM TRANSITION

As progress toward statewide decarbonization proceeds, New York's gas system will need to be strategically downsized through targeted electrification and decarbonized by displacing conventional natural gas with alternative fuels. Managing this transition will require new planning paradigms, smart investments including developing new thermal energy networks, workforce development to support current gas workers and accelerate the deployment of clean energy solutions, strategic use of alternative fuels, and more. NYSERDA is committed to being a critical thought partner to the Department of Public Service, the Public Service Commission, utilities, and stakeholders across the State as we facilitate the necessary and orderly transition of the natural gas system.

HYDROGEN AND ALTERNATIVE FUELS

NYSERDA will advance innovative clean hydrogen research, development, and demonstration projects that drive emissions reductions in hard-to-electrify sectors, such as medium- and heavy-duty transportation and non-road applications, high-temperature industrial processes, and district heating. These investments will stimulate the growth of New York State's hydrogen industry by advancing firms' technical and commercial readiness levels, assuring safety and reliability, and reducing costs.

In addition to hydrogen, NYSERDA will evaluate the potential of other low-carbon alternative fuels such as renewable natural gas, biofuels, and sustainable aviation fuels to replace targeted fossil fuel in difficult-to-electrify end-uses and to lower greenhouse gas emissions in New York State. NYSERDA will collaborate with a broad set of stakeholders to develop the building blocks for the use of clean hydrogen and other alternative fuels, including production, storage, and distribution, while minimizing greenhouse gas emissions and improving air quality.

CLEAN ELECTRICITY

NYSERDA's work to expand access to clean energy is bringing equitable climate benefits to New Yorkers by improving air quality, increasing energy security, strengthening our grid, and driving economic growth through project development, supply chain investments, workforce development, and job creation.

New York State's climate and energy policies and initiatives continue to drive the clean electricity transition, with new large-scale and distributed renewable energy projects coming online every year. Although the decades-high inflation rate experienced globally in recent years initially slowed some renewable energy development, NYSERDA is accelerating progress by procuring and deploying wind, solar, and energy storage projects; eliminating barriers and reducing costs to renewable energy development and operation; and helping improve statewide grid planning and coordination.

Renewable expansion across the State's electric grid is further enhanced by new investments in the transmission grid authorized by the Public Service Commission, modernized collaborative statewide grid planning processes, and more efficient and effective permitting processes.

In the coming years, New York State also anticipates significant growth in electricity demand driven by large economic development projects and widespread electrification of transportation and buildings. During the transformation of New York's electricity sector, reliability must remain a focus, including managing changing patterns of demand and the variety of generation resources and associated resource attributes for balancing generation and demand.

STATE ENERGY PLAN

The new State Energy Plan will help New York State guide the transformation of New York's generation, delivery, and use of electricity — while ensuring a future electric grid that is affordable, reliable, and resilient to climate change and extreme weather events. The Plan's analysis of historical trends and future generation scenarios will help give the State a clear sense of current and future electricity demand, supply and reliability needs.

The Plan will explore the deployment of renewable energy, dispatchable emission-free resources, advanced nuclear, and other technologies that will be essential to decarbonize our grid. Additionally, the Plan will assess the State's transmission and distribution infrastructure to identify constraints and necessary upgrades to improve reliability and resilience while advancing affordability and clean energy deployment.

With respect to renewable energy, the Plan will evaluate the market potential of large-scale renewables and distributed generation, track development progress and identify strategies to support deployments while balancing development with land preservation, community priorities and other siting considerations. It will also assess energy storage technologies and flexible grid resources to identify opportunities to enhance reliability and renewable integration.

The Plan will also examine the role of nuclear energy in meeting the State's reliability and capacity needs by assessing the contributions of the existing nuclear fleet and potential challenges related to decommissioning, long-term waste storage and disposal. The Plan's investigation into the potential of advanced nuclear technologies, such as small modular reactors, will provide NYSERDA with information on key considerations for their responsible deployment in the State's evolving energy landscape.

With these data-driven insights and actionable recommendations, the Plan will help chart a path toward a decarbonized, resilient, and affordable energy system that benefits all New Yorkers.

New York State continues to grow a strong pipeline of projects to deliver clean electricity to our homes and businesses.

AS OF MARCH 2025,
THERE WERE APPROXIMATELY:

19 GW

OF ACTIVE ONSHORE RENEWABLE ENERGY PROJECTS IN THE NYISO INTERCONNECTION PROCESS, CAPABLE OF GENERATING ENOUGH CLEAN ENERGY TO POWER OVER 20% OF NEW YORK'S 2030 ENERGY NEEDS

Additionally, there are currently more than **23 PROJECTS** in or in the process of applying for the Article 94c (ORES) queues, with **18 PERMITS GRANTED** since 2022, representing **MORE THAN 2.8 GW** of renewable generation—indicating more of the pipeline coming to fruition.

MORE THAN 6 GW OF DISTRIBUTED SOLAR has been installed statewide and, with a **PIPELINE OF 3.1 GW OF MATURE IN-DEVELOPMENT PROJECTS AWARDED NY-SUN INCENTIVES**, New York is on a path to meet its 10 GW by 2030 mandate. These installations are helping save money and reduce grid demand, avoiding **~$92 MILLION** in costs that would have otherwise been required to meet peak electricity consumption for the 2024–2025 Capability Period.

New York has **33 OPERATING** Tier 1 large-scale renewable projects as well as **42 PROJECTS IN ACTIVE DEVELOPMENT** comprised of wind, solar, and hydroelectric generation. Multiple large-scale solar and wind projects are actively under construction and **EMPLOYING HUNDREDS OF WORKERS**, including both the largest onshore wind and solar projects ever built in New York.

429 MW OF ENERGY STORAGE is operational as of December 31, 2024 with an **ADDITIONAL 688 MW OF IN-DEVELOPMENT PROJECTS** procured by NYSERDA and Investor Owned Utilities. **1.7 GW** of offshore wind projects are currently under construction. Once operational, they will generate enough clean energy to power over 10% of New York City.

Additionally, a **1,250 MW** high voltage direct current transmission line is currently under construction to deliver renewable hydropower energy to New York City.

HIGHLIGHTED PROGRAMS AND INITIATIVES FOR 2025-2028

CLEAN ENERGY STANDARD (CES)

The CES provides the framework for large-scale, clean generation in the State, as a key contribution toward increasing renewables to 70% of New York's electricity mix. It includes programs for the build-out of new large-scale renewable resources (Tier 1 and the Offshore Wind program), maintenance of existing renewable generators (Tier 2) and nuclear generators in the State (Tier 3, also referred to as the "zero-emission-credit program"), and new transmission to bring renewable generation into Zone J/New York City from Quebec (Tier 4).

CHAMPLAIN HUDSON POWER EXPRESS (CHPE)

Tier 4 of the CES underpins the development of the CHPE project, a 1,250-MW high voltage direct current (HVDC) transmission line that will bring 10.4 million megawatt-hours per year of low-cost, reliable, and renewable hydropower energy from Hydro-Quebec and deliver it into New York City. The CHPE line traverses 339 miles with approximately 60% of the line located underwater in Lake Champlain and the Hudson River and the remaining 40% of the line buried underground. CHPE is currently under construction and anticipated to be fully operational in mid-2026.

DISTRIBUTED SOLAR

NY-Sun drives distributed solar adoption through both residential and commercial rooftop installations and larger community solar projects. Community Solar makes solar energy affordable and accessible for all New Yorkers. Statewide Solar for All is a community solar utility bill assistance program launched in 2025 that provides utility bill discounts at no cost for low-income residents and eliminates customer acquisition costs for developers, benefitting low-income homeowners and renters who are otherwise unable to access solar.

Together, these programs stand as an example of successful market transformation through a combination of market acceleration and initiatives to overcome cost barriers, and deliver efficient and cost-effective deployments of distributed solar statewide, achieving New York's goal of 6 GW of distributed generation a year ahead of our 2025 goal, and keeping New York on course toward achieving 10 GW by 2030.

ENERGY AND CLIMATE EQUITY

NYSERDA incorporates environmental/climate justice and equity considerations into the foundation of its market role and throughout its program and policy initiatives to pursue a just clean energy transition that benefits historically marginalized communities on the front lines of the climate crisis:

Procurement design. When evaluating projects' economic benefits, NYSERDA prioritizes Disadvantaged Communities, environmental and climate impact reductions, economic and public health benefits, climate resiliency considerations, and energy storage projects that support the phaseout of the most polluting fossil generators statewide.

Transmission planning. NYSERDA participates in transmission planning to align with clean energy project development, seeks important partnerships, and cultivates benefits with communities.

Technical assistance and predevelopment. NYSERDA's NY-Sun program offers grants to address key barriers to solar and storage projects — providing benefits to Disadvantaged Communities.

Fossil fuel combustion reduction and replacement. NYSERDA's various programs to promote the deployment of renewables and energy storage accelerate reduced reliance on, and replacement of, fossil fuel powered electricity generation which include a focus on those located in and/or near Disadvantaged Communities, delivering important health benefits to those communities.

ENERGY STORAGE

NYSERDA's Energy Storage program engages stakeholders involved in developing and deploying energy storage technology, with a focus on supporting mature technologies and projects being deployed in the residential, commercial (retail), and utility-scale (bulk) sectors, toward the realization of administrative and statutory targets for energy storage deployment.

In June 2024, the Public Service Commission authorized the implementation of new NYSERDA residential, retail, and bulk programs to support an additional 4.7 GW of energy storage toward the goal of 6 GW by 2030. These programs, which will be launched in 2025, will complement the rollout of renewable energy generation, including a focus on regions where energy storage is needed to support the replacement of peaker plants, alleviate grid congestion, mitigate grid investment and operational costs, and aid the integration of large-scale renewables.

Additionally, the program works to address barriers and risks associated with rapidly scaling energy storage system deployment, such as through programmatic incorporation of recommendations issued by New York's Inter-Agency Fire Safety Working Group, so as to position New York as a national and global leader in fire safety mitigation best-practices for stationary battery energy storage systems. Furthermore, NYSERDA's public-private partnerships in long-duration energy storage innovation explore the promise of deep decarbonization driven by hydrogen, electrical, mechanical, chemical, and thermal-electric storage technologies.

BUILD-READY

Build-Ready advances project development on sites that present challenges for commercial developers. It complements private sector development and expedites the pre-development of large-scale renewable assets into revenue-generating clean energy projects, with a focus on underutilized, previously developed sites, such as brownfields, landfills, and former industrial properties. Build-Ready has coordinated, and will continue to coordinate, with the Office of Renewable Energy Siting (ORES) as projects move through the development cycle.

CLIMATE RESILIENCY

Comprehensive electricity resiliency involves preparing — both sector-wide and at the asset level — for a future with continued climate change. NYSERDA works with partners across the State and in related sectors to mitigate risks from our changing climate while transitioning to clean, reliable electricity sources. We will continue to engage in detailed sector studies and incorporate results of evolving resiliency design approaches and best practices to reduce future climate impacts.

At the sector level, as New York State's energy systems become more electrified and more reliant on emission-free electricity supply sources, new approaches will be needed to adapt to climate change and ensure the electricity system is flexible, safe, resilient, and cost-effective. Solutions such as demand-side behavior changes, grid operational adjustments, long-duration energy storage, investments in electric system capacities, and new technologies that account for the changing electricity system can mitigate the effects of climate change on New York's electricity system. NYSERDA supports this sector-wide work, providing the latest research, relevant guidance, and piloting innovative technologies.

At the asset level, NYSERDA solicitations for large-scale renewables and certain building-scale programs now require proposers to consider and mitigate risks from climate hazards the project may experience over its lifetime (such as flooding, extreme heat, and extreme storms) and incorporate lessons learned from NYSERDA-led studies, such as the 2021 Offshore Wind Climate Adaptation and Resilience Study and the Climate Impacts Assessment.

OFFSHORE WIND

NYSERDA's Offshore Wind program seeks to advance the cost-effective and responsible development of offshore wind while building a competitive, sustainable, and beneficial industry in the State and region. Current priorities for the program include supporting the construction of Sunrise Wind and Empire Wind 1, as well as advancing new generation projects, transmission, supply chain investments, and workforce development and training programs.

NYSERDA is developing an Offshore Wind Master Plan 2.0, which will set out a path toward continued growth of offshore wind development, expansion of the industry, and ability to meet regional needs. To support the Master Plan 2.0, the State is working with stakeholders to explore new strategies for the responsible and cost-effective development of offshore wind resources.

ADVANCED NUCLEAR

Announced in January 2025, NYSERDA, working with the Department of Public Service and other State agencies, is leading the development of a Master Plan for Responsible Advanced Nuclear Development in New York.

To guide next steps in the Master Plan process, NYSERDA published a Blueprint for Consideration of Advanced Nuclear Energy Technologies in January 2025. The development of the Master Plan process provides a framework for in-depth examination with stakeholders of the key issues raised by the Blueprint to develop recommendations. The Master Plan process is expected to conclude with publication by the end of 2026.

New York State will also co-lead the Advanced Nuclear First Movers Initiative, a multi-state initiative launched in February 2025 and facilitated by the National Association of State Energy Officials (NASEO).

NY GREEN BANK

NY Green Bank, a division of NYSERDA, is a successful and self-sustaining State-sponsored investment fund with the mission to transform financing markets in ways that accelerate New York's clean energy transition. By leveraging public capital to mobilize private investment into underserved green sectors, NY Green Bank aims to fill market gaps and enable private investors to expand clean energy and sustainable infrastructure deployment in New York State. As it relates to clean electricity, NY Green Bank's transactions support large-scale renewable energy projects, community distributed generation, and energy storage through a wide variety of loan products such as interconnection financing and construction-to-term loans.

ENERGY INNOVATION

NYSERDA's Grid Modernization program makes electricity more affordable and reliable by modernizing grid infrastructure and driving down technology costs.

The program will continue to develop innovative technologies and solutions through public/private partnerships to improve the grid performance, meet future grid needs, and enable both existing and future technologies that increase grid flexibility and resiliency.

Supported technologies include virtual power plants and other demand-side resources, the use of hybrid transmission and storage solutions, and the expanded integration of grid-enhancing technologies, such as dynamic line ratings and power flow control devices.

These initiatives help utilities avoid unnecessary transmission buildouts and more accurately forecast supply and demand. Supported projects range from long-duration energy storage to hydrogen-based microgrids to boost reliability and resilience, ensuring New Yorkers benefit from fewer disruptions and a more secure energy landscape.

Additionally, NYSERDA invests in advanced building systems and clean-energy solutions — such as heat pumps and geothermal loops — to reduce overall electricity use, smoothing demand spikes, and keeping rates stable.

WESTERN NEW YORK NUCLEAR SERVICE CENTER MANAGEMENT AND DECOMMISSIONING

The Western New York Nuclear Service Center, located near the hamlet of West Valley in northern Cattaraugus County, was established by the New York State Atomic Research and Development Authority, NYSERDA's predecessor, in the 1960s as part of a federal government initiative to commercialize spent nuclear fuel reprocessing in the United States.

After a six-year period of reprocessing spent nuclear fuel from federal government defense facilities and commercial nuclear power reactors, the facility permanently ceased operations in 1972.

Following the passage of the West Valley Demonstration Project Act by Congress in 1980, a decontamination and decommissioning project known as the West Valley Demonstration Project was initiated at the site in 1982 by the U.S. Department of Energy in cooperation with NYSERDA.

To date, significant progress has been made toward completing the West Valley Demonstration Project activities, including:

Solidifying the site's high-level radioactive waste into 278 vitrified glass "logs" and establishing the West Valley Demonstration Project as the first DOE cleanup site to complete its vitrification process.

Completing "Phase 1A" decommissioning, which involved demolition and offsite disposal of most of the above-ground buildings and facilities.

Disposing over 2 million cubic feet of radioactive waste at off-site facilities.

Controlling the migration of a strontium-90 groundwater plume.

Stabilizing two on-site radioactive waste disposal facilities to limit water infiltration and prevent erosion from surface water streams.

The site is also beginning the next critical phase of the cleanup and decommissioning work while planning for the final decommissioning activities, including:

- Initiating the "Phase 1B" decommissioning work in late 2025, which includes removing the below ground portions of the Vitrification Facility and Main Plant Process Building, as well as excavating significant quantities of contaminated soil and sediment for offsite disposal.
- Completing the Draft Supplemental Environmental Impact Statement for "Phase 2" decommissioning, which will be issued for public review in 2027. This study will provide information on potential environmental impacts from several decommissioning alternatives and will identify the agencies' preferred alternative.

As the cleanup work and planning activities continue, NYSERDA's on-site staff will remain vigilant in providing oversight of the federal government's West Valley Demonstration Project work, serving as stewards of public funds, and managing the balance of the Western New York Nuclear Service Center to protect public health and safety and the environment.

CLEAN AND EFFICIENT BUILDINGS

NYSERDA is leading the modernization and decarbonization of New York's homes, businesses, and industrial facilities to make our communities healthier, cleaner, more efficient, and resilient.

Energy efficiency and electrification in buildings helps to create better, healthier, more comfortable places to live and work. Investments in building energy efficiency and designing for flexible building energy loads can also reduce the electric grid investments needed for a reliable and resilient grid, while driving economic opportunity by growing clean energy jobs and businesses.

The importance of energy efficiency and electrification in buildings is expressed in statewide efforts to deliver 185 Trillion British Thermal Units (TBtu) of energy savings by 2025. NYSERDA's market acceleration initiatives and targeted incentive programs will continue to support building owners and residents in making investments in efficiency and electrification, which serve to reduce energy usage and support operating cost savings in efficient buildings.

Going forward, NYSERDA is focused on continuing to evolve its programs to support delivery of building retrofits at scale, including streamlining the experience of residents, contractors, and vendors; increasing coordination across relevant State entities and utilities; providing support for new technologies focused on clean and decarbonized retrofit solutions; and accelerating approaches that move beyond single-building solutions to effective deployment at the community level.

These policy and programmatic efforts are aimed at delivering benefits to Disadvantaged Communities and low- and moderate-income New Yorkers while maintaining energy affordability.

STATE ENERGY PLAN

The new State Energy Plan will guide New York's policies and programs helping the State's buildings become more energy efficient and resilient, reducing emissions while lowering energy costs for residents and businesses.

It will evaluate progress in end-use energy savings and assess the market potential for energy efficiency and electrification in residential, commercial, and institutional buildings and in the industrial sector.

The Plan will explore policy, financing, and innovation strategies to support homeowners, businesses, and industries in adopting energy efficiency, load management, and electrification upgrades. Additionally, the Plan will assess the climate resilience benefits of these energy upgrades.

The Plan will provide insights and recommendations into how New York can continue to drive innovation and investment in building efficiency and electrification, leading to healthier, more sustainable, and affordable communities while mitigating climate change.

HIGHLIGHTED PROGRAMS AND INITIATIVES FOR 2025–2028

EMPOWER+

EmPower+ provides no-cost and discounted energy efficiency and electrification solutions that will help income-eligible New Yorkers save energy and money, increase comfort, and upgrade their homes. EmPower+ customers who fully electrify may also qualify for a new statewide Energy Affordability program (EAP), which will provide financial relief to ensure monthly energy costs do not exceed 6% of household income.

EMPIRE BUILDING CHALLENGE/EMPIRE TECH PRIZE

The Empire Building Challenge and Empire Tech Prize advance the market for large building decarbonization through purposeful demonstrations in partnership with the real estate industry and solution providers. The Empire Building Challenge has served commercial and multifamily buildings since 2020 and has been expanded to include hospitals in 2025. The Empire Tech Prize in particular focuses on innovative, low-carbon heating solutions for tall buildings.

BUILDINGS OF EXCELLENCE

Buildings of Excellence supports the design, construction, and operation of carbon neutral multifamily buildings, including affordable housing. This program demonstrates repeatable approaches to electrifying heating in new and existing buildings, while also reducing buildings' peak demand through energy recovery, efficiency, and thermal storage.

FLEXIBLE TECHNICAL ASSISTANCE PROGRAM (FLEXTECH)

FlexTech shares the cost to produce objective, site-specific, and targeted studies on how best to implement clean energy and/or energy efficiency technologies. This program supports commercial, institutional, industrial, agriculture, and multifamily customers to chart their course for building decarbonization and modernization. As of 2025, FlexTech also serves P-12 schools, with additional funding for schools located in Disadvantaged Communities.

THERMAL ENERGY NETWORKS / LARGE-SCALE THERMAL

Through its Large-Scale Thermal program, NYSERDA supports the development of thermal energy systems and community thermal energy networks that can deliver affordable, resilient heating and cooling to buildings. NYSERDA also engages with Department of Public Service and stakeholders in the implementation of the Utility Thermal Energy Networks and Jobs Act.

ENERGY AND CLIMATE EQUITY

Equity considerations designed to address historic inequities in frontline communities and affecting vulnerable populations are a core part of a wide range of NYSERDA clean buildings programs and initiatives described in this and other mission outcomes, including:

- EmPower+ program
- Regional Clean Energy Hubs
- Financing solutions
- Multifamily housing initiatives

NYSERDA is leading the delivery of low- to moderate-income (LMI) home upgrade programs across New York, advancing complementary initiatives, deepening partnerships, and supporting programs that ensure equitable electrification while maintaining energy affordability.

Additionally, NYSERDA is committed to enhancing its longstanding partnerships with other State agencies to address historic inequities through tailored solutions for LMI and Disadvantaged Communities in a way that balances decarbonization, affordability, reliability, and public health.

CLEAN HEAT FOR ALL AND INDUCTION STOVE CHALLENGES

The Clean Heat for All Challenge and Induction Stove Challenge are cross-agency partnerships to develop innovative electrification solutions, such as window heat pump units and 120-volt induction stovetops, that can better serve the needs of existing multifamily buildings and hasten the transition to clean home energy systems.

CLEAN ENERGY PARTNERSHIPS

Clean Energy Partnerships with both the NYS Homes and Community Renewal and the NYC Housing Preservation & Development deliver energy efficiency and electrification directly into affordable housing financing transactions.

NY GREEN BANK

NY Green Bank offers financing for affordable housing and building decarbonization improvements in Disadvantaged Communities. NY Green Bank has set a target of investing at least $150 million in clean energy, energy efficiency, and building electrification projects that benefit the State's affordable housing market by the end of 2025. Additionally, NY Green Bank helps community development financial institutions (CDFIs) expand their local lending activity to support clean and efficient buildings and other sustainable infrastructure projects benefitting under-resourced communities through its $250 million Community Decarbonization Fund, a concessionary wholesale funding pathway available to CDFIs and other specialty lenders.

GREEN JOBS – GREEN NEW YORK (GJGNY)

Through GJGNY, NYSERDA offers New Yorkers access to low- and no-cost energy assessments, low-interest financing, and work readiness pathways to participate in the energy transition. NYSERDA has also developed new innovative financing solutions in the form of credit enhancements targeting financial intermediaries focused on expanding access to affordable financing for low-income households.

CLIMATE RESILIENCE

Climate hazards pose unique challenges to the more than six million buildings in New York State. Historical flood maps show that approximately 700,000 New Yorkers live in "flood-prone" zones, with many more working, traveling, or recreating in these areas.

Work at NYSERDA is underway to identify opportunities to incorporate climate resiliency into dedicated programs, investments, and assets to support both decarbonization and climate resiliency goals at the individual building scale. Drawing from the Carbon Neutral Buildings Roadmap, strategies under consideration include resiliency solutions for clean and modernized buildings, passive survivability, and facilities of refuge to withstand future disruptions to the energy system, with a focus on affordable housing and Disadvantaged Communities. NYSERDA works with partners at NYS Homes and Community Renewal, NYC Housing Preservation & Development, the NYS Office of General Services, and others to advance climate-resilient buildings across the State.

ENERGY INNOVATION

From single-family homes to skyscrapers, buildings use significant amounts of energy and are a major source of GHG emissions in New York State. Nearly 80% of buildings across the State were constructed before energy codes emerged in the 1970s and were not designed to be energy efficient. NYSERDA's innovation efforts focus on improving the availability, affordability, and performance of alternative and emerging clean heating and cooling and façade solutions, reducing their cost and building a local clean energy industry.

NYSERDA's End Use Applications (EUA) effort seeks to invest in innovative technologies that drive innovative retrofits, electrification (in particular in retrofit situations), and grid integration — paving the way to a resilient, zero-emissions future.

The EUA program supports the State's energy innovators via public-private partnerships to develop and commercialize new technologies to lower building energy consumption and emissions.

Investment areas include:

- Clean heating and cooling product innovation
- Building envelope (shell) improvement solutions for retrofits and new construction
- Solutions to enable low-GHG refrigerants
- Thermal storage solutions for load flexibility and higher energy efficiency
- Low embodied carbon building materials
- Intelligent buildings capable of grid (buildings as a distributed energy resource) and occupant interactions for improved operational efficiency and resiliency
- Addressing high energy intensity with specialized cooling and energy management for data centers and industrial loads

CLEAN TRANSPORTATION

NYSERDA is accelerating clean transportation adoption through a mix of incentives, research, engagement, and market development activities to help reduce air pollution; improve health; and deliver clean, efficient, and affordable transportation solutions for New Yorkers.

NYSERDA's programs are leading New York's transition to zero-emission transportation, including battery electric, clean hydrogen fuel cells, and other renewable fuels for light-, medium-, and heavy-duty vehicles and non-road vehicles and equipment. By 2035, all new light-duty on-road vehicle sales in the State must be zero-emission vehicles, and all medium- and heavy-duty on-road vehicle sales must be zero-emission vehicles by 2045. But transitioning to zero-emission vehicles is only part of the solution for decarbonizing the transportation sector. Improving and expanding access to transit and other clean transportation options can also provide much-needed access to jobs, education, and essential services for people who have been underserved by transportation options for years. Decarbonizing non-road transportation segments, such as construction and agricultural equipment, aviation, and maritime transportation, can also lead to substantial energy and environmental benefits.

The coming years will see an expansion of zero-emission vehicles, coupled with an increased investment in public transportation and other low-GHG transportation modes. NYSERDA is engaging with utilities and the Department of Public Service to ensure the electric grid is ready for an influx of electric vehicles (EVs); charging stations are built to keep pace with rapid EV adoption; and regulatory approaches are supportive of transportation electrification and of zero-emission vehicles (ZEVs) in general.

Also of critical importance, the transportation sector has historically been a major source of air pollution, especially in New York State's most overburdened communities. Reducing reliance on vehicles (via travel reduction and shifting to transit and human power modes) and shifting away from combustion to zero-emission fuel-cell technology in the sector will improve air quality and health outcomes for all New Yorkers, and the most vulnerable New Yorkers are likely to see outsized health benefits.

STATE ENERGY PLAN

The State Energy Plan will guide New York's efforts to expand access to safe, reliable and affordable transportation options and reduce transportation emissions.

The Plan will provide insights into current transportation trends across New York's roads, transit, rail, ports, non-road and pedestrian and cycling infrastructure to inform efforts to modernize the State's transportation landscape.

The Plan will also assess future infrastructure and grid planning needs to enable widespread adoption of zero-emission vehicles and non-road engines used in sectors like construction, shipping, rail, and agriculture.

Additionally, the Plan will explore policy, financing, and innovation strategies to advance electric vehicle adoption, alternatives fuels, and equitable access to clean mobility options, especially in Disadvantaged Communities. It will examine actions to promote low-carbon transportation infrastructure development, emergency transportation preparedness, and resilience in the face of climate change and other risks.

The State Energy Plan's recommendations will help New York reduce transportation emissions, expand zero-emission vehicle adoption, and improve access to public transit and other mobility options — contributing to a cleaner, more efficient and more accessible transportation system for all New Yorkers.

HIGHLIGHTED PROGRAMS AND INITIATIVES FOR 2025–2028

ELECTRIC SCHOOL BUSES

NYSERDA is advancing State efforts to support schools in implementing legislation requiring that, by 2027, all new school buses purchased are zero-emission — and that by 2035, all school buses on the road are zero-emission. This includes administering the NY School Bus Incentive program, which uses $500 million in Environmental Bond Act funding, to cover up to 100% of the difference in cost between an electric bus and a diesel bus, as well as the cost of charging infrastructure.

NYSERDA facilitates engagement between school bus fleets and their electric utilities and coordinates with stakeholders across the school transportation system to answer questions and address market challenges. Schools and their contractors can also receive funding for the development of a school bus Fleet Electrification Plan, which helps fleets understand electric school bus and charging technologies, scope necessary utility upgrades and develop a long-term plan to transition to a zero-emission fleet in a financially responsible manner.

NY TRUCK VOUCHER INCENTIVE PROGRAM

NY Truck Voucher Incentive program (NYTVIP) uses funding from the Volkswagen diesel emissions settlement to retire older diesel trucks and buses and replace them with new, zero-emissions models. Since its establishment, the NYTVIP has approved approximately $46 million in projects for 274 electric trucks and buses. In 2025, NYTVIP will introduce additional funding that provides fleets with greater flexibility to begin their transition to zero-emission vehicles and equipment.

DRIVE CLEAN REBATE

Drive Clean Rebate has provided more than 190,000 point-of-sale rebates of up to $2,000 for New Yorkers buying EVs since 2017, leading to a reduction of approximately 450,000 metric tons of CO_2 emissions every year. NYSERDA is allocating additional funding to continue this program over the next three years. NYSERDA intends to maintain and evolve the Drive Clean Rebate to reflect emerging market needs.

ENERGY AND CLIMATE EQUITY

Historically, Disadvantaged Communities have experienced disproportionate impacts from transportation emissions while also having more transit dependent populations.

To address these issues, NYSERDA is working to expand access to clean transportation options for residents of frontline communities and accelerate the transition to zero-emission vehicles within environmental justice areas.

These efforts include a dedicated focus on reducing emissions and improving air quality in Disadvantaged Communities Projects funded through the New York Clean Transportation Prizes.

Through these and other clean transportation investments, NYSERDA is helping to address transit gaps while strengthening community partnerships, creating local clean energy jobs, reducing greenhouse gas emissions and other harmful airborne pollutants, and improving public health outcomes.

CHARGE READY NY 2.0

Charge Ready NY 2.0 offers rebates for workplaces and multifamily buildings that install Level 2 charging stations, with bonuses available for partners who work with NYSERDA to promote EVs to their employees and tenants.

FEDERALLY FUNDED EV CHARGING INVESTMENTS

NYSERDA is investing more than $75 million overall in federal funding for EV charging stations for travelers and community members. This includes subsidies for fast charging stations along major roadways and in mid-sized cities with little or no fast charging, and additional investments in Level 2 charging stations at tourist destinations and municipal parking lots. NYSERDA partners with public or private site owners and private developers to complete these projects.

CLEAN TRANSPORTATION STANDARD

At the direction of Governor Hochul, NYSERDA is undertaking a study to analyze the benefits of a Clean Transportation Standard in New York State focused on driving adoption of zero-emission transportation while supporting the deployment of electric and zero-emission transportation in overburdened and Disadvantaged Communities.

NEW YORK CLEAN TRANSPORTATION PRIZES

New York Clean Transportation Prizes focus on community-scale transportation, advanced mobility, and electric truck and bus innovation solutions that address air pollution and increase transportation access in underserved communities. Many of the projects launched new services in 2024 and have begun collecting data to inform future programs and policy.

ENERGY INNOVATION

NYSERDA will continue investing in new solutions that minimize EV impacts on the electric grid through advanced vehicle-grid interactions — critical for deploying EVs at scale and at a reasonable cost.

Additional future areas of study include e-bike battery safety and efficiency improvements for EV auxiliary loads.

NYSERDA anticipates funding demonstration projects related to micromobility freight solutions, shared mobility business models that serve low- to moderate-income populations, and hard-to-electrify market segments (especially large trucks, construction equipment, and agricultural equipment).

NYSERDA will also focus on advancing fuel cell electric vehicles (FCEVs), which can help New York State meet the ZEV target in medium- and heavy-duty sectors, reduce GHG and co-pollutant emissions from hard to electrify non-road equipment, reduce peak load on the grid from the transportation sector, and provide resiliency solutions.

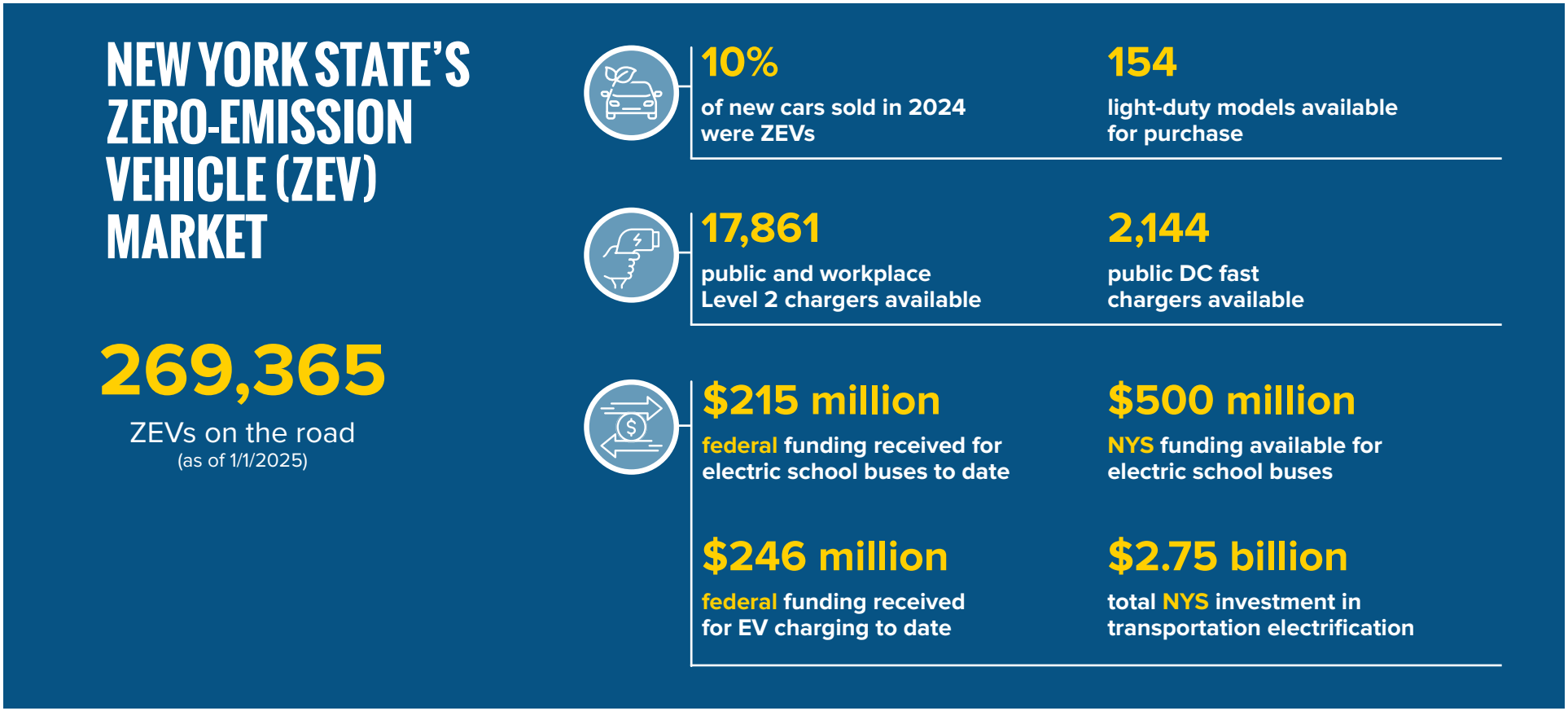
NYSERDA will support the development of innovative solutions to reduce cost and improve performance in FCEVs and hydrogen fueling infrastructure for medium- and heavy-duty applications (on- and non-road), while collaborating with other State agencies and communities to ensure safe deployment in New York.

CLEAN MOBILITY PROGRAM

NYSERDA's Clean Mobility program aims to improve zero-emission connections to public transportation and showcase innovative shared transportation options through planning and demonstration projects. The program prioritizes projects that help overcome persistent transportation challenges, especially in Disadvantaged Communities. Planning projects and initial demonstration projects were selected in 2024, with a second round of demonstration project funding for those completing planning projects expected in 2025.

NY GREEN BANK

NY Green Bank continues to work to accelerate the advancement of the clean transportation market by addressing financing gaps to support the deployment of electric and zero-emission vehicles and the build-out of EV charging infrastructure in New York State. NY Green Bank aims to invest at least $100 million in clean transportation projects by 2025. In a first-of-its-kind transaction for the fund, NY Green Bank closed a $60 million deal with Revel, the largest provider of public fast charging in New York City, to accelerate the deployment of hundreds of new public EV fast charging stalls across New York City.



APPENDIX: NYSERDA STRUCTURE

NYSERDA BOARD MEMBERS

Charles Bell
NYSERDA Vice Chair (Acting Chair)

Sherburne B. Abbott
Teaching Professor, Department of Environmental Health and Engineering, Whiting School of Engineering, Johns Hopkins University

Dale Bryk
Director of State and Regional Policy, Harvard Environmental & Energy Law Program and a Senior Fellow at the Regional Plan Association

Rory M. Christian
Chair and CEO, New York State Public Service Commission

Marie Therese Dominguez
Commissioner, New York State Department of Transportation

Justin E. Driscoll
President and Chief Executive Officer, NY Power Authority

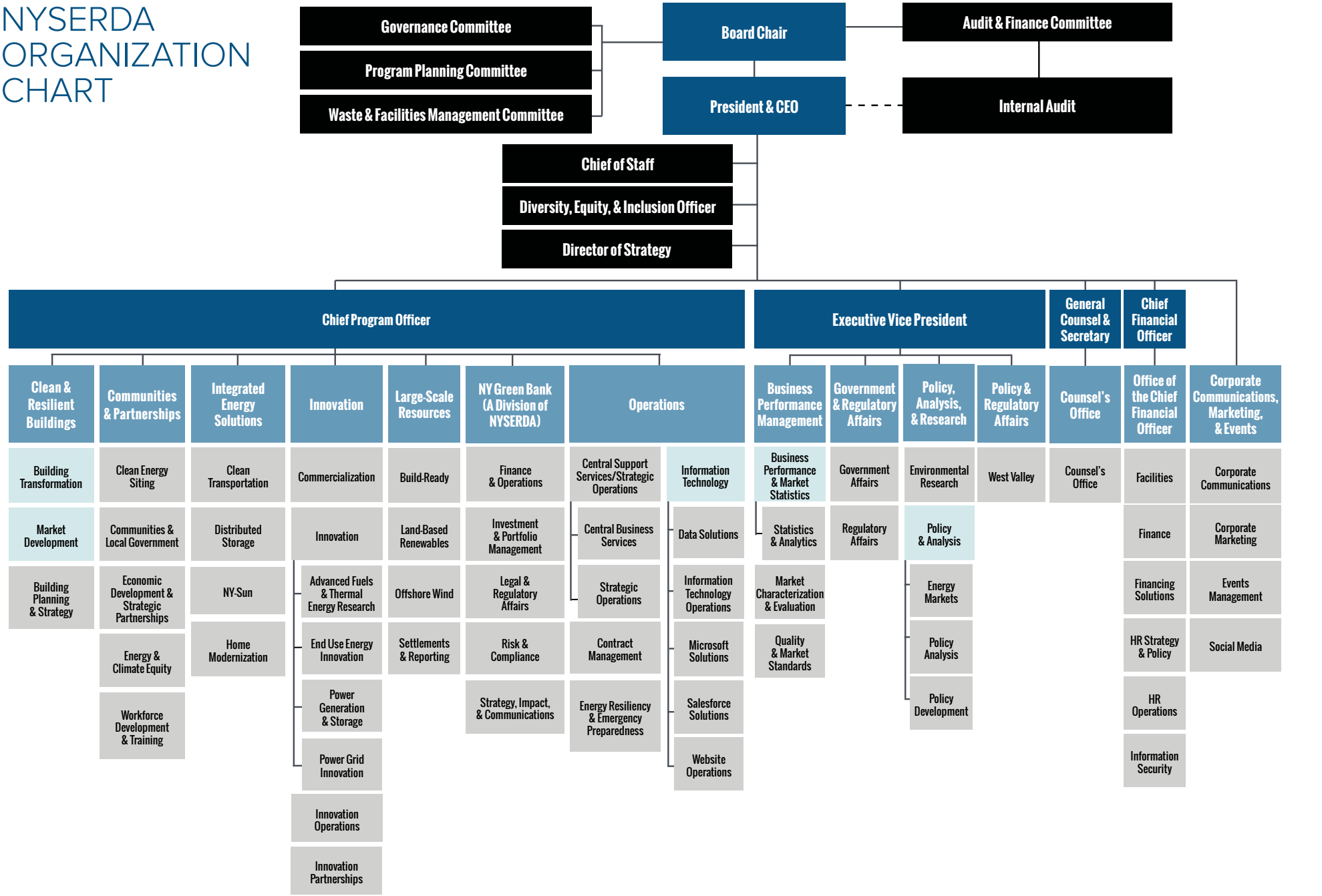
Lindsay Greene
President and CEO, Brooklyn Navy Yard Development Corporation

Jennifer Hensley
Senior Vice President of Corporate Affairs, Con Edison

JoAnne Hewett
Laboratory Director, Director's Office, Brookhaven National Laboratory

Jay L. Koh
Managing Director and Founder, Lightsmith Group

NYSERDA ORGANIZATION CHART



Color Key:

Reporting to the President or Board Chair	President & CEO, Board Chair, Officers	Business Unit Lead	Portfolio Leads	Team Leads

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