

PowerUp NYC

Report Overview

What is PowerUp?

A complement to and expansion of NYC's 2023 climate action plan, *PlaNYC: Getting Sustainability*, **PowerUp is the City's first-ever long-term energy plan**. PowerUp was informed by a year-long study conducted in partnership with community-based organizations, NYC residents, and energy industry experts, as well as by novel technical research. PowerUp details actions that the City can take to achieve a just energy transition and decarbonize three key sectors of our economy: the Energy Grid, Buildings, and Transportation.

Energy Grid: To achieve a 100% carbon-free electricity grid by 2040, the City is advancing multiple large-scale renewable energy, energy storage, and grid infrastructure projects, as well as community-level energy initiatives.



Buildings: Buildings are responsible for nearly 70% of NYC's GHG emissions. The City is working to phase out fossil fuel building equipment and enhance funding for energy efficiency retrofits, while reducing energy costs for low-to-moderate-income households.



Transportation: Transportation accounts for nearly 30% of NYC's GHG emissions and contributes to poor air quality, especially in environmental justice communities. The City is addressing this by electrifying vehicles, expanding charging infrastructure, and promoting public transit.



What Does a Just Energy Transition Mean for New Yorkers?



Well-paying jobs & training opportunities



Priority investments in EJ communities



Cleaner air and a healthier environment for all

Key Terms

Clean Energy: Power produced by sources that do not emit carbon dioxide or other types of air pollution. Solar, offshore wind, hydropower, and energy storage are examples.

Decarbonization: The process of removing sources of GHG emissions (such as oil power plants or gas-powered cars) to mitigate climate change.

Electrification: Transitioning from fossil fuel-powered equipment like boilers, furnaces, and conventional cars to clean electricity-powered equipment like heat pumps and electric vehicles.

Environmental Justice (EJ) The principle that all people, regardless of race, disability, age, or socio-economic background, have a right to live and work, in communities that are safe, healthy, and free of harmful environmental conditions.

Just Transition: A unifying, place-based set of principles, processes, and practices that build economic and political power to shift from an extractive economy to a regenerative economy.

Greenhouse Gas (GHG): Any gas that absorbs and traps heat from the sun, like carbon dioxide or methane. Emitted by combusting fossil fuels, like oil and gas, to produce power, GHGs are a leading cause of climate change.

PowerUp NYC

NYC's Energy Systems Today and Tomorrow

NYC's current energy system is almost entirely powered by polluting **fossil fuels**. Natural gas accounts for 65% of the City's total energy production, and 89% of energy used in residential buildings. In addition to emissions from combustion, natural gas infrastructure leaks methane – a greenhouse gas **80 times stronger** than carbon dioxide.

Fossil fuel combustion creates air pollutants like nitrogen oxides and fine particulate matter (PM2.5). When inhaled, these pollutants can complicate **heart conditions; worsen asthma** and other respiratory illnesses; increase risk for **diabetes, cancer, and fertility** issues; and heighten vulnerability to viruses like COVID-19.



Energy Resilience is the ability of energy systems to withstand and recover from disruptions. Resilience is a key pillar of an equitable energy future because power outages most impact disadvantaged communities.

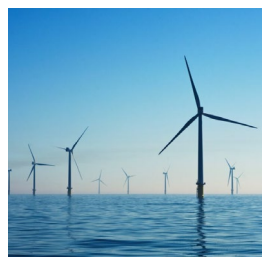
Resiliency challenges include:

- **Extreme Weather:** Events like hurricanes, floods, and drought can damage power lines and cause electrical outages. Extreme heat also strains the grid by driving up energy demand for fans and air conditioning.
- **Growing Demand:** As the City electrifies everything from heating to electric vehicles, both new energy production and energy storage are needed to ensure grid reliability.



What's Next for NYC's Electric Grid?

NYC is building a cleaner, greener, and more equitable future by transitioning from fossil fuels to clean energy. NYC is investing in both purchasing and producing renewable energy. NYC's growing clean energy portfolio includes:



Offshore Wind



Solar



Battery Storage

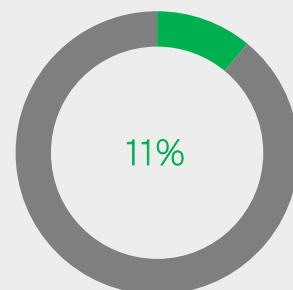


Hydropower



Fast Facts

Renewable Energy in NYC



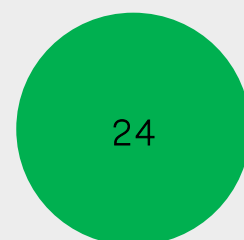
Only 11% of NYC's electricity currently comes from renewable resources - the vast majority comes from polluting fossil fuels

Electricity Consumed

142.5 GWh
per day

NYC uses an average of 142 gigawatt hours of electricity every day. That's enough to power an average U.S. hospital for nearly 19 years!

NYC Power Plants



NYC has 24 in-city fossil fuel plants, disproportionately located in environmental justice communities

PowerUp NYC

Greening the Grid

NYC is committed to building **clean energy infrastructure** — particularly in low-income and environmental justice communities — to benefit residents, mitigate climate impacts, reduce energy cost burden, improve public health, and create well-paying jobs. The City's goals and actions align with the State's commitment to achieving a zero-emissions electric grid by 2040.

Three Pillars of the Clean Energy Transition



Reduce Energy Demand

Decrease stress on the grid by investing in energy-efficient infrastructure **and building upgrades** like LED lights, better insulation, and high-performance heating and cooling systems.



Electrify Buildings & Transportation

Get fossil fuels out of circulation by transitioning vehicles and building equipment from oil, natural gas, gasoline, and diesel energy to all-electric power, while also expanding public transit and supporting sustainable modes of transportation.



Green the Grid

Build new infrastructure: battery storage, transmission lines, solar panels, and wind turbines to support electricity generated by clean and renewable sources.

Clean Energy Initiatives

Utility-Scale Transmission: NYC supports multiple long-distance transmission projects that will bring hydroelectric power from Canada and solar and wind from upstate NY to NYC.



Offshore Wind (OSW): NYC supports the State's goal of achieving 9 GW of OSW by 2035, with 4.3 GW already underway. The City has committed \$10 million for OSW workforce development and projects that the industry will create 13,000 NYC jobs by 2035.



Energy Storage: Storage is crucial to ensuring a reliable clean energy future. NYC is initiating zoning and permitting reform to expand storage areas, reduce outages, support peak demand days, and help building electrification.



Solar Power: The City is accelerating solar power deployment through several initiatives, including leveraging City-owned buildings for community-scale solar and installing solar panels on 3,000 homes to lower electricity rates for low-income and EJ area residents.



NYC's Clean Energy Commitments

100%

Clean Electricity by
2040

1,000 MW

Citywide Solar by
2030

18 Million MWh

Per Year Long-Distance
Clean Energy
Transmission

100 MW

Solar on City-Owned
Buildings by
2030

80%

Reduction in Fossil Fuel-
Based Electricity by
2030

PowerUp NYC

Buildings

Buildings produce nearly **70% of NYC's greenhouse gas emissions**, largely due to burning fossil fuels, like oil and natural gas, for space heating and cooling, hot water, electricity, and appliances like gas stoves. These emissions **pollute the air and worsen health conditions** like asthma. NYC is addressing these issues through **energy efficiency and electrification**.

Electrification Retrofit Challenges:

Retrofitting an existing building is more difficult than constructing a new building designed without fossil fuels. Retrofit challenges include:

- **Strategic Phasing:** When does it make most sense to retrofit building systems – all at once, or gradually?
- **Upfront Costs:** How can we address retrofit barriers related to high upfront costs and occupant disruption?
- **Equity & Energy Burden:** How can we ensure that all New Yorkers have equal access to the health and comfort benefits of electrification while protecting residents from high utility costs and energy insecurity?

Building Initiatives

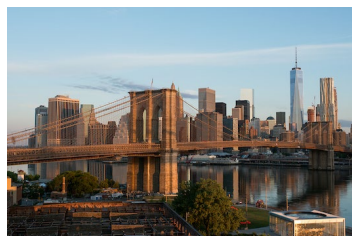
Close Retrofit Funding Gaps: The City is advocating for its fair share of state and federal funding to reduce electrification costs for rent-regulated housing while also expanding technical assistance and financing programs for a variety of building types.



Increase Tenant Protections: The City is advocating for progressive energy rate structures that reduce utility costs for low-income consumers, publishing guidelines on owner-tenant utility bill allocation in affordable housing, and advocating for HEAP reform to provide additional utility assistance.



Phase Out Fossil Fuels: The City is phasing out spending on fossil fuel infrastructure in City-owned buildings by purchasing electric alternatives like heat pumps, and is exploring pathways, including legislative action, to phase out fossil fuels use citywide.



Focus on Affordable and Public Housing:

The City will implement NYCHA's *Clean Heat for All* program and install 30,000 window cold climate heat pumps in multifamily public housing. NYCHA will also reduce electricity rates for LMI households by installing 30 MW of solar by 2026.



Building Solutions

Building Envelope

Enhance occupant comfort and boost energy efficiency by upgrading windows and improving insulation to minimize heat loss and drafts.

Heating and Cooling

Replace existing fossil fuel equipment with electric heat pumps. Heat pumps can meet space heating, cooling, and domestic hot water needs, and can be three times more efficient than conventional systems.

Lighting

Save on energy bills by upgrading to LED light bulbs – they pay for themselves with 90% higher efficiency, and longer lifespans than incandescent bulbs.

Electric Cooking

Unlike gas stoves, induction and electric stoves do not emit toxic gases into homes and can have faster cook times and more precise temperature control.

Solar & Green Roofs

Add a green roof with soil and plants to improve insulation and stormwater management or install rooftop solar panels to generate clean, renewable electricity.

PowerUp NYC

Transportation

Transportation accounts for nearly 30% of NYC's greenhouse gas emissions, with privately owned on-road vehicles, taxis, and for-hire vehicles making up 90% of those emissions. The City is **accelerating adoption of electric vehicles, greening our municipal fleets, and promoting continued growth of our mass transit and walking and biking networks** to create a cleaner, greener, and healthier city for all.

Transportation Initiatives

Public Transit: NYC public transit saves roughly 17 million metric tons of carbon from being emitted every year. Our subway system is already 100% electric, and the MTA has committed to an all-electric bus fleet by 2040. The City is also promoting non-vehicular travel through congestion pricing and expanded greenway initiatives.



Electric Vehicles (EVs): The City is pursuing federal funding and collaborating with private-sector partners to create a city-wide EV charging network that ensures that no resident is more than 2.5 miles from a fast charger. The City has also established requirements for taxi and ride-share companies to achieve all-electric fleets by 2030.



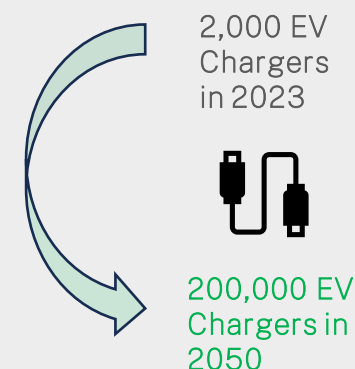
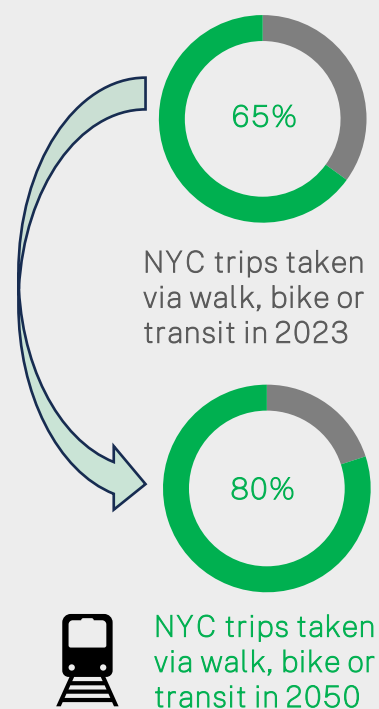
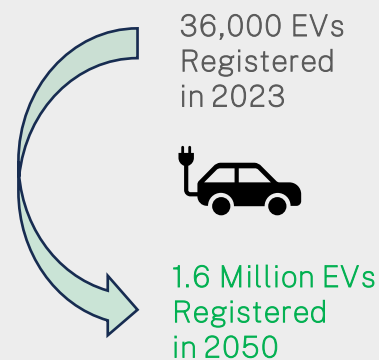
Heavy-Duty Vehicles: The City is expanding NYC's Clean Trucks Program to provide incentives to purchase EV heavy-duty trucks. The City is also exploring ways to create low-emission freight zones in areas with the most vehicle pollution, and to promote alternatives to trucks, like cargo bikes, for last-mile deliveries.



School Buses & City Fleets: NYC will leverage federal funding to electrify its fleet of more than 300,000 vehicles, with an interim goal of electrifying all light-and-medium-duty vehicles by 2035. The City is prioritizing green school bus initiatives to reduce pollution in environmental justice areas.



NYC Transportation Goals

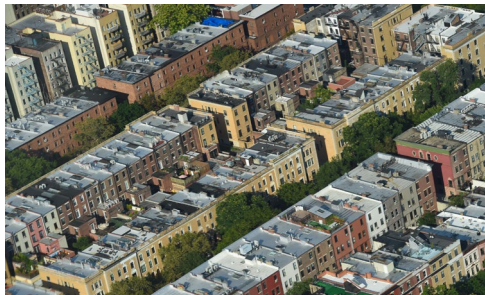


PowerUp NYC

Next Steps

The climate crisis we face demands that we come together and take action to build a cleaner, greener, and more just city for all New Yorkers. A key element of that work is **creating a resilient, reliable, and sustainable energy system that can keep the lights on without pumping carbon emissions into our air**. That is what PowerUp NYC – the City’s first-ever Long-Term Energy Plan – is all about. The initiatives in PowerUp reflect a collaboration between City agencies, community-based organizations, residents, and industry experts **to ensure that NYC’s clean energy transition is equitable, inclusive, and generates both near-term and long-lasting benefits for all**, especially those who are most vulnerable and historically underserved.

What Does PowerUp Mean for New Yorkers?



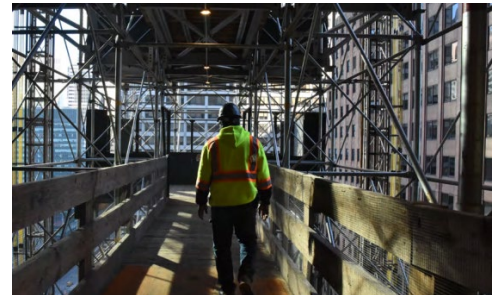
Home & Business Upgrades

Clean infrastructure funding is helping renters and owners access low-to no-cost building improvements, including better insulation, windows, heating and cooling systems, and energy efficient appliances.



Lower Utility Bills

Energy efficiency upgrades can help renters and building owners save on utility bills. New Yorkers can also lower their electricity costs and improve their resilience through rooftop or community solar.



Jobs & Workforce Training

Clean energy mean jobs – the offshore wind industry alone is projected to create 13,000. The City is investing millions in green jobs training, especially in environmental justice communities.



Healthier Communities

Reducing emissions and air pollution from sources like dirty power plants, outdated appliances, and vehicle exhaust will create a healthier world for all New Yorkers, now and for future generations.



Improved Infrastructure

Energy efficiency, clean energy, and electrification mean new investment in infrastructure and public building upgrades. Get ready for cleaner buses, revamped libraries, and updated public schools.



A More Equitable City

By prioritizing historically disinvested communities and those disproportionately exposed to climate hazards, the City is investing in the equitable distribution of health, economic, and environmental benefits.