

REPOWERING GOTHAM

**State Action to Build New York City's
New Energy Economy**



**NEW YORK CITY APOLLO ALLIANCE
convened by Urban Agenda**

DECEMBER 2006

“Freeing our city from fossil fuel dependency
and creating good jobs is today’s Apollo
challenge for New York City.”

NYC APOLLO ALLIANCE is part of a bold national movement that links job creation, environmental stewardship, and energy independence, spearheaded by the national Apollo Alliance. With over 600 members, NYC Apollo Alliance brings unions, environmental and environmental justice advocates, businesses, educators and community-based organizations together to build new alliances and implement a visionary policy agenda that will grow new green collar jobs and achieve clean energy solutions. NYC Apollo Alliance is convened by Urban Agenda and led by a 13-member Steering Committee:

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URBAN AGENDA is an action-oriented public policy, research and advocacy organization dedicated to building a stronger and more diverse labor movement and a socially, environmentally and economically just New York City.

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EXECUTIVE SUMMARY

Today, New York City finds itself at a place of great promise and great peril. The City's enormous energy needs and reliance on fossil fuels are rising as we continue to grow and welcome new residents. The dangers of fossil fuel use, including climate change and unhealthy communities, are increasingly clear to an ever-larger number of New Yorkers, who also understand that the "more power plants" approach to electricity generation exacerbates these problems. At the same time, New York's historic economic growth in some quarters is masking decline in others. A struggling industrial economy, spiraling cost of living and lack of affordable housing threaten to push the city's working class into the ranks of the working poor. New York City cannot remain viable through this century if we do not address these challenges.

The problems of energy use and consumption, however, offer a great opportunity to link environmental stewardship and job creation in developing a more sustainable and equitable New York City. With targeted investments and action, the city can exchange its dangerous reliance on fossil fuels for a diversified energy portfolio, foster a new industrial sector within the regional economy and enhance the health and performance of our built environment through a sustainable development approach. With its location, workforce and industrial infrastructure, New York City is well positioned to support a new economy based on green building, green manufacturing and energy conservation. A new energy, high performance economy will improve the city's environmental sustainability while expanding the benefits of economic growth to all of its communities.

The steps we must take to seize this opportunity already have been proposed by many of New York City's environmental, business, labor and environmental justice leaders. Yet although New York City can achieve much on its own, State action is needed on several fronts if the city is to build a new energy, high performance economy. This report calls on New York State to help us realize this vision by spearheading the following initiatives:



State Action to Build New York City's New Energy Economy

- Explore Incentives to Encourage Greater Energy Efficiency in the New York City Housing Stock
- Adopt Home Furnace Efficiency Standards More Stringent than Those Proposed by the U.S. Department of Energy
- Support New York Collaborative High Performance Schools (NY-CHPS) Standards for New York City Schools
- Create a State “Green Wave” Initiative to Expand Investment in Green Business and Real Estate Development
- Create a Carbon Tax to Capture the Cost of Pollution and Offset the Impact on Consumers by Reducing the Sales Tax
- Make the New York State Energy Research and Development Authority (NYSERDA) More Effective Through Decentralized Outreach and Programs Developed for Commercial and Residential Renters
- Require that All Empire State Development Corporation (ESDC), and Other State-Funded, Development Projects Include Sustainability Standards
- Update the State Environmental Quality Review Act (SEQRA) to Include a Project’s Contribution to Global Warming as a Main Topic for Review
- Support Sustainable Mass Transit Projects and Traffic Alleviation Initiatives in New York City
- Revise Electricity Metering and Billing to Encourage Energy Efficiency and Renewable Energy Generation
 - Institute Smart Metering and Time-based Rate Systems
 - Unbundle Electricity by Separating Utility Bills from Rent
 - Decouple Utilities’ Financial Health from the Amount of Electricity They Distribute
 - Expand Net Metering to All Commercial and Industrial Power Consumers

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Repowering Gotham: State Action to Build New York City's New Energy Economy

The Status Quo is Not an Option

As New York City continues to grow and welcome new residents, our energy needs, and our reliance on fossil fuels, is also growing. That dependency comes with ever-steeper costs. Greenhouse gas emissions contribute to global warming, raise the risk of illness and death related to heat and air quality and threaten our access to clean drinking water.¹ Equally significant, fossil fuel dependence has contributed to the global instability that threatens New York City's security.² The poor air quality and high rates of asthma in the city as a whole most severely affect children in low-income communities of color, which are often home to new power plants built to keep up with the city's energy appetite.³ At the same time, New York's historic economic growth in some quarters is masking decline in others. A struggling industrial economy, spiraling cost of living and lack of affordable housing all threaten to push New York's working class into the ranks of the working poor.⁴ We cannot continue as a thriving city through the 21st century if we fail to address these challenges. Solutions are needed now. Delay means that the challenges facing us will only multiply.

“New York City has an unprecedented opportunity to link environmental stewardship and job creation.”

Environmental Stewardship and Job Creation

Along with these severe and worsening risks, however, the city also faces an unprecedented opportunity to link environmental stewardship and job creation. Successfully doing so would create social, economic and health benefits for all New Yorkers. Those benefits include trading our dangerous reliance on fossil fuels for a diversified energy portfolio, fostering a new industrial sector within the regional economy and enhancing the health and performance of our built environment, from businesses to schools, through a sustainable development approach. Finally, we as a city and country can start to take advantage of enhanced energy efficiency solutions as a growing strategic necessity.

We have the tools to seize this opportunity, but we need a plan that is ambitious and equal to the scale of the problem, concrete, fiscally prudent and focused on creating good jobs in New York City while improving the environmental health of our communities. The plan must include partnership with state government. Although New York City can achieve much on its own, success in this area will depend on support from New York State.

The major component of a New York City plan must be large-scale investment in renewable energy, energy efficiency and green building with state support. Such an investment will help wean New York City off fossil fuels and diversify our energy portfolio. Studies have shown that renewable energy production creates “40 percent more jobs per dollar invested” than more conventional energy production industries.⁵ Energy efficiency “creates 21.5 jobs for every \$1 million invested, compared to 11.5

jobs,” created in conventional energy production.⁶ Shifting toward renewable energy and efficiency offers the region a comparative economic advantage we now lack, as jobs in these sectors are also far more likely to be locally based than jobs in the fossil fuel sector.⁷ Our city boasts a highly skilled industrial workforce, but manufacturing job losses have been severe. In fact, “manufacturing jobs declined by 3 percent nationally during the 1990s, but by 33 percent in New York [City].”⁸ We can retrain our workforce, and adapt our existing manufacturing infrastructure, to create the renewable energy installations that will help power our city while providing operation and maintenance jobs for years to come. From solar panel installations on urban roofs to methane digesters at our waste facilities, renewable energy can also prime a green technology industry in the City. Pursuing energy efficiency, the cleanest, most cost-effective energy “resource”, will create retrofitting jobs, save us money and reduce our reliance on the polluting, subsidized fuels of the past.⁹

The economic possibilities of high performance, green building for New York City are equally promising. New high performance construction uses a wide variety of energy efficient, recycled and low-emission building materials that in most cases represent slightly modified versions of existing products. Many small manufacturers, accustomed to modifying their production for clients, can “tweak” their operations to supply the low-emission carpeting, recycled lumber or fly ash cement that a green building boom would demand.¹⁰ In addition, since high performance construction also preferences building materials that come from within a 500-mile radius of the building site,¹¹ New York City’s manufacturers could supply a regional green building trend that is just beginning.¹² Already, “the estimated value of the U.S. green building products market is about \$8 billion today, up from less than \$800 million a mere six years ago.” Moreover, “by 2010, the market will be worth about \$32 billion.”¹³ New York City is thus well positioned to take advantage of this exciting emerging market. Promoting green building across all sectors will save money through improved energy efficiency, jumpstart a New York City based green building market and ensure that every New Yorker, from public housing tenants to school kids, enjoys a healthy living and working environment.

Finally, New York City’s commitment to a new energy, high performance economy has the potential to breathe new life into city communities that have never fully recovered from the loss of manufacturing jobs, while pushing back against trends that are beginning to divide New York into showpiece, green communities of the privileged and status quo communities of the less so. Green affordable housing development, improved mass transit, support for walkable communities and brownfield redevelopment will be important initiatives in spreading the benefits of a new economy citywide. Embracing these priorities will create jobs while ensuring that all New York’s communities reflect our best efforts towards a more equitable, sustainable city.



Moving Forward

In 1962, John F. Kennedy challenged the nation to accomplish the near impossible by sending a man to the moon and back within ten years. Freeing our city from fossil fuel dependency and creating good jobs is today's Apollo challenge for New York City. To seize the potential for a new energy, high performance economy, we need State action on several fronts. The New York City Apollo Alliance calls on New York State to help us realize this vision by spearheading the following initiatives:

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Explore Incentives to Encourage Greater Energy Efficiency in the New York City Housing Stock

Only one in three households in New York City is owner-occupied, so it is imperative to keep in mind the costs to landlords and tenants, as well as homeowners, of



encouraging capital improvements to increase energy efficiency.¹⁴ As a city, we are simultaneously facing the challenge of growing energy demand and a housing crisis, with affordable housing becoming increasingly scarce.¹⁵ New York State must explore direct incentives or revisions in the tax code that will actively encourage energy efficiency in multiple-unit dwellings and remove the cost barriers to energy efficiency retrofits. Simple, cost-effective energy efficiency measures instituted across neighborhoods will create local jobs and save thousands of dollars in annual oil, gas and electricity costs.¹⁶ The end goal of a citywide energy efficiency retrofitting program with State support will be a built environment not solely reliant on the energy sources of the past. Most importantly, energy efficiency improvements across our housing stock will mean affordable and low-income housing that is less expensive to build and operate, keeping affordable housing affordable.

“Schools built at the cutting edge of green design improve student performance while saving money.”

Adopt Home Furnace Efficiency Standards More Stringent than Those Proposed by the U.S. Department of Energy

After years of inaction on federal home furnace and boiler efficiency standards for gas, oil and propane furnaces and boilers, the US Department of Energy (DOE) recently proposed revised standards that are weaker than those recommended by most energy experts.¹⁷ Fortunately, the DOE has suggested that states apply to waive these guidelines and create their own, providing an opportunity for New York State to set standards that will help New York City’s homeowners and landlords warm their properties more efficiently and save on their heating costs. Even the weak national rule proposed by the DOE “would reduce customers’ bills [especially in cold weather regions like New York] by a total of \$2.5 billion over 32 years.”¹⁸ This standard would set the Annual Fuel Utilization Efficiency (AFUE) of most home furnaces, for example, around 84 percent, meaning that 16 percent of the fuel put in the furnace is lost through venting and not converted into home heat.¹⁹ Opting out of the national standard and setting a more stringent AFUE standard of 90 percent for most home furnaces will save money through greater efficiency, reduce fuel-use for home heating and support the already strong market presence of high-AFUE home heating equipment. New York State should also adopt the most stringent possible boiler standards once the Federal review process for these standards is complete. The resource waste and pocket book impact of low-efficiency furnaces and boilers has no place in the high performance buildings of New York City’s future. State action is needed to avoid settling for a weak national standard at great cost to New Yorkers.

Support New York Collaborative High Performance Schools (NY-CHPS) Standards for New York City Schools

Schools built to healthy and high performance design standards are essential in improving the health and productivity of kids, teachers and school staff members.²⁰ Schools constructed to be at the cutting edge of green design improve student performance while saving money through energy-efficiency measures and streamlined building maintenance.²¹ For example, studies have found that an investment “of up to \$100,000 to incorporate green building features into a \$5 million project [can save] at least \$1 million dollars over the life of the building.” In other words, a “minimal

upfront investment of about two percent of construction costs typically yields life cycle savings of over ten times the initial investment.”²² Real world experience with new school construction has even shown that high performance schools can cost less to construct due to reduced expenditures in heating and cooling systems.²³

An investment in high performance school construction across New York City will mean less money spent on energy and more for books, equipment and teachers. At the state level, the New York State Education Department (NYSED), in cooperation with the New York State Energy Research and Development Authority (NYSERDA), has developed strong benchmarks for constructing high performance schools, the New York Collaborative High Performance Schools guidelines, or NY-CHPS, that are designed for the conditions we face in New York City and aim to improve student health and academic achievement.²⁴ Unfortunately, the regulatory hurdles and mis-prioritization that discourage sustainable building practices in New York City threaten the future development of healthy and high performance schools. New York State should vigorously support NY-CHPS as the design standard for schools in New York City by associating state funds for New York City new school construction and renovation with the adoption of NY-CHPS as a minimum design standard.

Create a State “Green Wave” Initiative to Expand Investment in Green Business and Real Estate Development

One innovative and fiscally sound approach for states to nurture the high performance economy is to invest a portion of state employees’ pension funds in green technology. Recently, “clean technology...has emerged as the sixth largest venture investment category in the U.S. and Canada.”²⁵ Studies have shown that investment portfolios comprised of companies with “superior environmental profiles” perform better than portfolios that do not include such companies, and that these funds “tend to be more profitable than the S&P 500.”²⁶ Recognizing the economic, environmental and social benefits, the State Treasurer of California recently launched a “Green Wave” initiative that includes investing \$1 billion of the state employees’ and state teachers’ \$250 billion in combined pension funds in environmentally screened stocks and new energy, high performance companies.²⁷

The New York State Comptroller should work to match California’s commitment and invest a comparable percentage of our state employee pension funds in environmental innovations, with a particular focus on building a green real estate portfolio around high performance building, retrofitting and sustainable development projects in the New York City area. These real estate projects are multiplying, provide a secure return on investment and feed the nascent New York City green building materials and construction market.²⁸ The State Comptroller should work with the State’s investment advisors, for example, to support the development of, and invest in, green Real Estate Investment Trusts



(REITs). A New York State Green Wave Initiative would reaffirm that it is smart business to think sustainably, while supporting good, green collar jobs.

Create a Carbon Tax to Capture the Cost of Pollution and Offset the Impact on Consumers by Reducing the Sales Tax

It is generally accepted that governments should tax activities that cause harm to society and reduce or eliminate taxes on activities that merit encouragement. Tax reform can be revenue-neutral while nonetheless shaping societal behavior. Currently, in New York State, as everywhere else in the country, the emission of carbon dioxide, the most prominent activity that contributes to global warming, is not assessed with taxes, levies or other monetary disincentives. In essence, society as a whole bears the costs of carbon emissions, which are partially offset by tax revenues, including the regressive sales tax. New York State could discourage greenhouse gas emissions in a revenue neutral manner by taxing the emission of carbon, through a surcharge on fuels based on their carbon content, for example, and simultaneously reducing regressive state levies such as sales taxes. As a pilot program to precede statewide implementation, the State should grant New York City the authority to institute a carbon tax and earmark the generated revenues towards reducing the City component of the State sales tax. This would most severely affect power producers, while mitigating any costs passed along to power consumers through the sales tax reduction. Simultaneously lowering a regressive tax and penalizing unwanted action in a revenue-neutral way will use markets to strategically encourage the new energy, high performance economy.

“State entities should adopt sustainability standards for projects they fund and invest only in projects that meet or exceed these standards.”

Make the New York State Energy Research and Development Authority (NYSERDA) More Effective Through Decentralized Outreach and Programs Developed for Commercial and Residential Renters

The New York State Energy Research and Development Authority (NYSERDA) offers a number of powerful tools to help New York City reach its new energy, high performance potential, including a slate of programs and incentives supported by a dedicated revenue source. Many of the businesses and individuals who could benefit from NYSEERDA, however, are often unaware of, or unable to access, its programs. Some of these programs are complex and difficult for small businesses to take advantage of, while others provide less value than the cost of filling out the application paperwork. To maximize its impact, NYSEERDA should start with an overall assessment of the needs of the businesses and residents of New York State, and then determine what services are needed and the best manner of delivering them. This should include confronting the special challenges posed by businesses and tenants who rent their office or living space, a typical situation in New York City. The assessment should also include consideration of the best practices of the City and State economic development agencies. For example, the City’s Department of Small Business Services provides funding to local development corporations to promote its programs at the local level and help companies apply for benefits. The State Empire State Development Corporation (ESDC) also provides funding to local groups to administer the Empire Zone program and help companies get certified for state benefits. NYSEERDA should form a decentralized statewide network of local organizations that will be able to advertise, adapt and implement its programs in the manner best suited

for local business and residential involvement. This would especially help integrate energy conservation into the portfolio of economic development services available to aid companies. A decentralized, customer-driven NYSEDA will enable New York’s City’s residents and businesses to take better advantage of existent opportunities and provide the feedback necessary for broadening the Authority’s positive impact in our city.

Require that All Empire State Development Corporation (ESDC), and Other State-Funded, Development Projects Include Sustainability Standards

Many of the largest development projects with the greatest predicted impact on community health in New York City are at least partially funded by state entities like the ESDC. Unfortunately, the ESDC mandates no sustainability requirements for funding projects, and some ESDC supported mega-projects, like the Atlantic Yards plan in Brooklyn, do little to advance sustainable development.²⁹ State entities that support large-scale developments in New York City, including the ESDC, the Port Authority of New York and New Jersey and the Transit Authority, should adopt sustainability standards for projects they fund and invest only in projects that meet or exceed these standards. In this effort, the State can look to the very successful high performance building program developed by the Battery Park City Authority. The large state-funded development projects of the future should offer positive examples of sustainable planning and spurs to the new high performance economy, rather than repeating the environmental mistakes of the past.

Update the State Environmental Quality Review Act (SEQRA) to Include a Project’s Contribution to Global Warming as a Main Topic for Review

New York State’s State Environmental Quality Review Act (SEQRA) “requires all state and local government agencies to consider environmental impacts equally with social and economic factors during discretionary decision-making.”³⁰ Currently, however, both State Environmental Quality Review (SEQR) and the City’s response to SEQRA, City Environmental Quality Review (CEQR), do not specify that the Environmental Impact Statement (EIS) for any project include its potential contribution to global warming. New York City, with its extensive coastal areas and wetlands, could bear the brunt of some of global warming’s most dangerous effects, including rising sea level and catastrophic storm surges.³¹ Thus it is in our best interest to ensure that New York City’s development, as well as the State’s, has as small a role in accelerating global warming as possible. To this end, the State should amend SEQRA to include the assessment of a project’s contribution to global warming as one of the main topics for EIS review.

Support Sustainable Mass Transit Projects and Traffic Alleviation Initiatives in New York City

A socially, environmentally and economically just city does not only depend on new energy sources and good jobs. Strong mass transit systems and adequate support for transportation alternatives to expensive and environmentally unsustainable

“The State should grant New York City more autonomy over local transportation issues.”

personal car use, like walking and bicycling, reduce dependence on fossil fuels while connecting communities with job opportunities. New York State can aid the progress of this vision by supporting and funding City transit priorities that will require State or Federal dollars, including the Second Avenue subway line and the proposed Cross Harbor Rail Freight Tunnel.

The State can also help by granting New York City more autonomy over local transportation issues. For example, the State should empower New York City to install and operate red light and speeding cameras, rather than making the City apply to the State for their installation. These devices, which record and ticket traffic scofflaws, are a powerful tool in reducing dangerous driving, and reprioritizing safe walking and bicycling.³² The State should also empower New York City to explore and implement any traffic alleviation policies the City deems necessary.

In general, reducing driving in the City, or “vehicle miles traveled”, is key to simultaneously reducing road crashes and fatalities, gridlock, air pollution, greenhouse gas emissions and oil use. “Reduced use of cars contributes disproportionately to creating a safer and less oppressive road environment,” encouraging bicycling, walking and livable communities.³³ New York City needs to focus on promoting transportation alternatives and discouraging personal automobile use. New York State needs to give the City the authority to determine the best methods for reaching this goal.

Finally, the State should help institute and effectively promote a Location-Efficient Mortgage (LEM) program for low and middle-income individuals. LEM calculates the savings of not operating a car into the purchasing power of homeowners who reside near public transportation.³⁴ This program could benefit most New York City residents and effectively support smart growth.

Revise Electricity Metering and Billing to Encourage Energy Efficiency and Renewable Energy Generation

Institute Smart Metering and Time-based Rate Systems:

To the greatest extent practicable, the New York State Public Service Commission (PSC) should institute a Time of Use or Real Time rate structure for residential, commercial and industrial ratepayers. Smart metering technology allows consumers to accurately track the times of day when they consume utility power. With this information, utilities can set higher electricity prices for system-wide peak energy demand periods and lower prices for lower demand periods. Being charged according to a time-based rate system encourages residential and business consumers to conserve energy during peak demand periods, saving them money in avoided energy costs and lessening the strain on the power distribution grid. This reduction in peak demand will provide some constructive relief from our energy needs, as opposed to building more polluting power plants that are often sited in the low-income, communities of color already most affected by environmental burdens.³⁵ Indeed, underutilized capacity already exists to offset construction of inefficient plants chiefly



operated to meet peak demand. The city currently has a virtual power plant in each ratepayer who can curtail load when generators become overtaxed.³⁶ Smart metering technology can send the price signals to initiate consumer power-use reductions, preventing sprawling blackouts when the power delivery system is pushed beyond its limits.

Under the current system, the utilities charge commercial consumers based on *the customer's individual* peak demand, rather than on *system-wide* peak demand, thus diluting incentives to reduce energy demand when it is greatest across all consumers. Mandating that utilities calibrate demand charges to the system and/or network peak and removing barriers preventing residential utility customers from operating smart meters “could save customers hundreds of dollars each year in energy costs and radically reduce the usage of electricity in New York.”³⁷ At the same time, an expansion of residential smart metering must be tailored to best preserve the interests of low income and elderly consumers, ensuring that new rate systems do not place pressure on their more limited budgets.

Unbundle Electricity by Separating Utility Bills from Rent:

At the moment, an estimated 22 percent of renter-occupied units in New York City are not billed directly for their electricity based on usage.³⁸ Rather, the occupant’s “utility bill is bundled with their...rent.” A considerable number of commercial renters are similarly not metered directly, and thus are candidates for direct metering. “Metering and billing these customers directly for their energy use”, rather than embedding a fixed rate in their rent, “will unlock substantial electricity savings” by making customer energy efficiency measures cost-effective.³⁹ Unbundling would help pass along the savings of energy efficiency to renters and can incentivize energy efficiency, saving New York’s businesses and residents money while reducing our overall energy use. Indeed, studies have shown that consumers who have been switched over from fixed rate billing to direct billing reduce their electricity consumption by up to 26 percent.⁴⁰ The New York State PSC should support electricity unbundling for commercial renters and investigate expanding unbundling in the residential sector, working with tenants’ groups to ensure that unbundling does not unduly raise immediate electricity costs or rental prices.

Decouple Utilities’ Financial Health from the Amount of Electricity They Distribute:

“Current regulatory policy distorts utility decision-making by linking their financial health to the amount of electricity distributed over the wires. This results in revenues being reduced whenever consumers or distribution utilities invest in energy efficiency or distributed generation, disincentivizing these key tools in creating a new energy economy. [The] New York State [PSC] should separate utility revenues and production by ensuring that their cost recovery is independent of total electricity delivered. This could be accomplished through modest, regular adjustments in the kWh [kilowatt-hour] components of electricity rates based on factors that reflect the utilities’ long-term cost of service and recovery of those costs. The utilities would then be financially rewarded for lowering their long-term costs through an incentive mechanism that equitably shares gains between shareholders and consumers.”⁴¹

“Smart metering technology can help prevent sprawling blackouts when the power delivery system is pushed beyond its limits.”

Striking a balance between demand reduction and utility cost recovery will enhance our city's environmental sustainability while including the utilities as allies in the new energy economy.

Expand Net Metering to All Commercial and Industrial Power Consumers:

Net metering is a system that “allows [utility] customers who use distributed generation systems to sell excess power back to the utility at retail prices.”⁴² Since small, commercial, industrial and residential renewable systems, such as solar installations, do not always generate a consistent level of energy, the owners of these systems can take power from the grid when they have a deficit and give power back when they have a surplus, literally running their meter backwards. Their monthly utility bill then charges them for their *net* electricity demand. Net metering's potential for incentivizing clean, renewable energy production and use is especially important for New York City, considering that “because of existing transmission constraints, 80 percent of the City's electric demand... must be met with... generation” in the five boroughs.⁴³ Our enormous demands for power and the limits of grid capacity have contributed to massive system failures, like the Queens blackout of 2006. Current caps on the size of net metered systems and limits on program enrollment have kept it from having as big an impact as it might. New York State should raise the caps on system sizes and overall program enrollment for all renewable energy technologies and make all commercial and industrial consumers eligible to participate. The New York State PSC should also resist utility imposition of high connection tariffs, which may significantly reduce the savings of net metered systems for commercial and industrial consumers. It is in the best interest of the State to ensure that New York City's power grid is not overtaxed. It is in the best interest of the City that our demand for power is met with clean, job creating, renewable energy solutions rather than the power plants of the past.

Prepared by Jack Dafoe, *Urban Agenda*.

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