The City of New York

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Testimony of John Lee
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Before the New York City Council Committee on Environmental Protection

Hearing on Introduction 478
In Relation to Requiring Photovoltaic Systems for City-Owned Buildings

Good afternoon Chairman Constantinides and members of the Committee on Environmental Protection. My name is John Lee and I am the Deputy Director for Green Buildings and Energy Efficiency in the New York City Mayor's Office of Sustainability. I am accompanied this afternoon by Ellen Zielinski, Director of the Clean Energy & Innovative Technologies Program at the Department of Citywide Administrative Services ("DCAS").

Thank you for the opportunity to testify today regarding Introduction 478 ("Intro 478"), which would require the installation of solar photovoltaic ("solar PV") systems on City-owned rooftops where cost-effective.

Background: Solar on City-Owned Buildings

In *One New York: The Plan for a Strong and Just City* ("OneNYC"), released in April 2015, the Mayor articulated a vision for reducing citywide greenhouse gas ("GHG") emissions 80 percent by 2050 over a 2005 baseline (known as "80 by 50"). Central to this vision is the expansion of renewable and distributed energy resources, including solar energy, which the Mayor has emphasized by setting a target to have 250 megawatts of solar capacity installed on private buildings citywide by 2025 ("250 megawatt goal"). City residents and businesses have responded to this call, and have more than doubled the amount of solar capacity installed in the city since the beginning of this Administration.

In addition to the citywide 80 by 50 goal, City government has tasked itself with paving the way forward by reducing GHG emissions from municipal government operations by 35 percent by 2025. A central component of the Mayor's plan to attain the City government emissions target is the installation of 100 megawatts of solar energy on City-owned properties ("100 megawatt

goal"). I am pleased to report that in the last year alone, the City completed installing nearly four megawatts of solar capacity on its buildings, bringing the total for City property to nearly five megawatts.

Our colleagues at the Department of Citywide Administrative Services ("DCAS") have worked diligently to identify the most promising City-owned properties for solar installations by performing site assessments at the very largest buildings, defined as those with rooftops that are 30,000 square feet or larger. This amount of unobstructed roof space can hold enough solar panels to generate 300 kilowatts of electricity, enough to provide approximately 15-25% of a school's annual energy needs, for example. As a result of their efforts, the City has installed solar photovoltaics at 34 public sites, including a 1.2 megawatt project at the Port Richmond Wastewater Treatment Plant in Staten Island, 17 public schools, and atop City Hall. Eighteen additional solar projects are nearing completion, which will roughly double the current installed capacity of solar energy on City-owned rooftops.

DCAS also recently released a Request for Proposals ("RFP") for additional installations to generate 15 megawatts of solar power across 88 public sites across the five boroughs, including Bellevue Hospital, Hostos Community College, the Bronx Hall of Justice, the Queens Museum, the Abe Stark Ice Rink, and 66 public schools, among others. DCAS is also advancing an innovative resilient solar program to install solar PV systems that incorporate battery storage for emergency backup power at emergency shelters, fire houses and other critical facilities. To maximize the use of City-owned assets, DCAS is also assessing the prospects for ground-mounted solar as well as solar canopy installations at parking lots and parking garages.

This progress illustrates the City's commitment to the 100 megawatt goal. In the private sector, solar installations have more than doubled since the end of 2013, from less than 25 megawatts to more than 57 megawatts today across nearly 4,000 installations. Currently, more than 18 megawatts of private solar installations are scheduled to be installed, which sets the city on track to meet the Mayor's 250 megawatt citywide goal.

Intro 478

The Mayor's Office of Sustainability and our colleagues at DCAS fully support the installation of solar PV where feasible and appropriate in New York City. We applaud the sponsors of Intro 478 for seeking to accelerate the City's adoption of clean and renewable solar energy to reduce greenhouse gas emissions from government operations and improve the city's air quality. I would like to highlight several opportunities to improve the text of this bill to more effectively advance the City's 80×50 and 100 megawatt goals.

Intro 478 would require DCAS to report on the total number of City-owned buildings in each community district, the number of City-owned buildings in each district for which a solar installation would be cost-effective, and the anticipated energy cost savings associated with all

cost-effective installations in each district, among other information. For the purposes of this bill, "cost-effective" is defined to mean that the energy and maintenance cost savings from the installation of a solar PV system will at least offset the up-front capital cost of the installation, which would include the cost of any required roof upgrades, within 25 years. The bill would further require DCAS, in cooperation with other Mayoral agencies, to install solar PV systems on every non-landmarked City-owned building where such an installation would be cost-effective.

As a threshold matter, it should be emphasized that solar PV is just one of a number of sustainable roofing practices that City agencies can adopt to reduce their energy usage, improve air quality, and advance other environmental goals. For example, solar thermal systems are similar to solar PV systems in that they harvest the sun's energy, but they use this energy to heat water for a building's heating and hot water needs rather than generating electricity. A building with significant heating needs that would otherwise use expensive and carbon-intensive fuel oil for heating may benefit more from a solar thermal system than a solar PV system.

Alternatively, various forms of roof treatments offer local environmental benefits that should not be overlooked; to provide a few examples, highly reflective roof surfaces can reduce local air temperatures, helping to mitigate the urban heat island effect; "blue roofs," designed to contain stormwater and allow it to pond before gradually draining, help to prevent against combined sewer overflow events; and "green roofs," also known as garden roofs or vegetated roofs, offer both heat island mitigation and stormwater retention benefits, in addition to improved air quality.

Agencies should therefore have latitude to implement other roof improvements, especially where they may be better-suited to a given location, layout and use of a building or facility than a solar PV system. For example, in an area that is subject to frequent combined sewer overflow events, it may be more important for the overall sustainability of a community to consider the installation of a green or blue roof. Intro 478 should therefore provide a process with criteria to exempt buildings for which the installation of solar PV would conflict with alternate sustainability projects or an agency's integrated energy plan.

Proposed Modifications

Where solar PV systems are the preferred alternative, however, we support policies that enable their appropriate deployment. Assessing each and every City-owned building would divert important resources from focusing on the development of projects at buildings with roofs that are the most appropriately suited for solar PV. The City owns over 4,000 buildings throughout the five boroughs, many of which are small municipal facilities such as DEP pump houses, park comfort stations, kiosks, and so forth. Installing solar panels on these small facilities, where structurally feasible, would only yield incremental contributions toward our 100 megawatt goal and is unlikely to be cost-effective, as the energy production from small systems is often insufficient to offset high fixed installed-costs. To better reflect DCAS's approach of assessing the very largest City-owned properties where solar could deliver the best utilization of public dollars, the scope of reporting should be limited to City-owned buildings greater than 10,000

gross square feet, which are already subject to annual energy and water use benchmarking under Local Law 84 of 2009.

Next, while cost-effectiveness is an important factor in determining the viability of solar PV systems purchased with capital, these outright purchases only represent a fraction of the City's solar installation strategy. DCAS aims to satisfy 80% of its 100 megawatt commitment through power purchase agreements ("PPAs"), which require no up-front capital outlay from the City. Under a PPA, a third-party solar provider owns the installation and sells the system's energy production back to the City, typically under a 20-year agreement. PPAs are especially attractive for the City because private installers are eligible to take advantage of a 30% federal investment tax credit that is unavailable for municipal governments, making PPA terms more advantageous in many instances. Importantly, however, DCAS cannot know how PPA terms compare to its comparatively affordable utility service from the New York Power Authority ("NYPA") without first issuing a solicitation for PPA proposals. The City should be allowed to exercise its discretion as to the financial arrangements governing its solar installations, whether purchased outright or through a more innovative model.

With these factors in mind, Intro 478 should be modified to set out objective criteria for eligible, or "solar-ready," sites. The Mayor's Office and DCAS suggest criteria for solar-ready buildings as those that:

- Have a roof under ten years old;
- Have a roof in a state of good repair and structurally sound;
- Are able to host a minimum 50 kilowatt solar PV system, taking into account required building and fire codes, which is equal to approximately 5,000 square feet of unobstructed, code compliant roof area; and
- Have no current or foreseeable future issues that would negatively impact a solar PV system, such as significant shading or planned building expansions.

Solar installations on buildings that meet these solar-readiness criteria are more likely to be cost-effective, whether purchased outright or financed through a PPA. We recommend that Intro 478 be modified to require that DCAS report on the number of City-owned buildings in each district that are solar-ready, rather than the number of City-owned buildings for which solar is cost-effective. This change would remove the need for DCAS to issue a solicitation for a PPA just to comply with reporting requirements. The bill could then require DCAS and agencies to install solar PV systems for buildings that are solar-ready.

The criteria that determine solar readiness are dynamic and shaped by the realities of a complex building stock and a rapidly evolving solar market. We applaud the Council for acknowledging the impact that dynamic market conditions and changing technologies have on the economics of solar installations. The City has gained important insights into these dynamics from the 34 solar installations completed to date. Many unforeseen factors have impacted planned solar projects,

such as complex roof conditions that limit the available space for solar panels, deficiencies in building electrical systems, and a lack of compatibility with proposed solar technologies. We propose that this bill retain this flexibility as it relates to defining the solar readiness criteria as part of the reporting process.

Importantly, however, DCAS would first need to collect data on the roof characteristics of City buildings, including age and condition, in order to determine solar readiness. Requiring this information as part of the benchmarking process for City buildings above 10,000 gross square feet, as proposed earlier, would allow DCAS to systematically compile valuable data to amass an inventory of roof characteristics (e.g., shading, obstructions, structure), while conserving staff resources by limiting the assessment to buildings that are highly likely to be solar-ready.

Conclusion

On behalf of the Mayor's Office, I offer my support for the expansion of solar energy on City rooftops. The Office of Sustainability and DCAS would welcome the opportunity to work with members of the Committee on Environmental Protection to refine Intro 478 to ensure that it furthers the good work that DCAS is conducting in pursuit of our 100 megawatt goal. In particular, we want to ensure that this bill includes criteria informed by the City's considerable marketplace experience that will empower DCAS to develop solar projects that deliver the greatest benefit to the City.

Thank you again for the opportunity to testify this afternoon.

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Comments Regarding Intro 478-2014
Requiring Photovoltaic Systems for City-Owned Buildings

Thank you to Chair Constantinides and other members of the Committee on Environmental Protection for introducing and sponsoring this important bill.

My name is Josh Kellermann and I work at ALIGN: The Alliance for a Greater New York. ALIGN is a community-labor coalition dedicated to creating good jobs, vibrant communities, and an accountable democracy for all New Yorkers. ALIGN co-coordinates the Climate Works for All coalition with the NYC Central Labor Council and the NYC Environmental Justice Alliance. Climate Works for All works to reduce emissions and create good jobs for New Yorkers.

In late 2014 Climate Works for All released a self-titled report with a 10-point platform to reduce emissions, protect our communities, and create good jobs for New Yorkers. Installing solar on schools was one of our key recommendations and something we have fought to make possible since that time. The proposed bill covers all municipal buildings, and we are excited about this expansion of the proposal.

There are many opportunities that stem from solar on schools. The Department of Citywide Administrative Services (DCAS) can begin to save some of the $240 million per year it spends just on electricity for the Department of Education buildings. This is money down the drain that should be recaptured and used for educational endeavors. Solar installations on schools can be tied with educational and vocational trainings for students. Targeted local hire programs can bring local community residents into the workforce. Schools and other municipal buildings can also become more resilient to the impacts of climate change, providing a refuge for community members during future severe weather events.

While there are many benefits to this legislation, I would like to recommend a few changes to this bill to avoid missed opportunities and ensure that community and labor is not left out of this process.

1. Expand the assessment and implementation to all forms of renewable energy, not just solar. This includes geothermal, wind, solar of course, and energy efficiency improvements.
    a. Solar will not be the right answer for many schools. When conducting the solar assessment, why not look at the geothermal and wind opportunities at the same time? This is a more efficient and cost effective use of public funds and will yield the best results for our municipal building stock.
    b. Installing solar systems on an energy inefficient school is like putting lipstick on a pig. We must address efficiencies at the same time we address renewables.
    c. There is already a geothermal bill that will determine whether geothermal is cost-effective for city buildings – let's tie these together.
    d. There is already energy benchmarking of municipal buildings and there will be increased energy efficiency measures stemming from the Mayor's OneNYC plan. Let's tie these together.
    e. These assessments should not be done in isolation from each other. They should be part of a single assessment, a single cost-effectiveness analysis, and a single, comprehensive retrofit and renewable package.

2. Include clear standards that benefit climate-vulnerable communities and workers.
    a. The current proposal does not include any requirements around local hiring of disadvantaged community members. We should should be building on the successes of the Build it Back program which created a jobs pipeline into career-track jobs for Sandy impacted communities. The Building and Construction Trade Unions of NYC are working with community groups and the city to make these programs work, and they should be improved and expanded through future programs like this.
    b. It is unclear whether the more recent RFP for solar installations on municipal buildings includes a Project Labor Agreement (PLA). It should be made clear that public expenditures on renewable energy installations will not be used to undermine worker standards in NYC.
    c. There is no prioritization of climate-vulnerable communities in the assessment and selection for solar installations. These communities are the most vulnerable to climate change and deserve to be provided the first opportunity to have renewable energy on their schools and other municipal buildings – these create important emergency refuges and also demonstrate a commitment to building back better after Hurricane Sandy.

3. Ensure that Power Purchase Agreements (PPAs) are actually cost-effective, lift up communities and workers, and give NYC the most bang for its buck
    a. Most if not all of the current and planned solar installation on public buildings are done through PPAs. Do PPAs truly give NYC the biggest bang for its buck? We submitted a FOIL request to DCAS in October for the numbers demonstrating both the short- and long-term financial benefits of PPAs as compared to direct public funding, and to date have not received an answer. PPAs may make financial sense, but they also can serve to privatize traditional public services that indeed provide better services at a better price, and ensure good job creation for NYC residents. We should not blindly assume that PPAs are the best path forward.

We appreciate all of the work that has been put into expanding NYC's solar installations. We support this bill, but encourage the council to work with us to find ways to make it and future renewable energy legislation more comprehensive, cost-effective and worker and community friendly.

Thank you.

LISA DICAPRIO: STATEMENT IN SUPPORT OF INT. 478-2014

My name is Lisa DiCaprio. I am a professor of Social Sciences at NYU where I teach courses on sustainability. I am also a member of several environmental organizations.

Thank you for the opportunity to speak today in support of Int. 478-2014 which will require the installation of photovoltaic systems on all NYC-owned buildings, including public schools.

As peak solar corresponds with peak demand for electricity, solar power contributes to climate change mitigation and adaptation.

Climate change mitigation: By displacing fossil fuels, solar installations on NYC-owned buildings will facilitate meeting the goal of reducing greenhouse gas emissions by 80% by 2050 and the actualization of NYC's on-site renewable energy potential.

Climate change adaptation: With regard to climate change adaptation, distributive solar power will also reduce the load on NYC's electricity grid during heat waves, which are projected to increase as a result of climate change. Moreover, Con Edison now allows solar power to be installed with the option to disconnect from the grid in advance of an extreme weather event that could cause power shortages. In these situations, public schools and libraries can become community centers where at least a minimal amount of electricity is available, especially if the solar installations include battery storage.

Installing solar panels on public school buildings, as feasible, is important for these four reasons:

1. There are 1,200 school buildings in NYC, several hundred of which have flat roofs that are especially suitable for solar panel installations.

2. Peak generation of electricity on these installations will occur during summer months when school is not in session and the surplus electricity will reduce peak load on the NYC grid.

3. Solar installations in schools, which can include real time monitors illustrating the amount of electricity generated during different times of the day, will contribute to climate change literacy and the transformation of schools into living laboratories of sustainability.

4. Public schools with solar power can also provide a focal point for community educational programs about renewable energy and inspire teachers, administrative staff, and parents to consider solar power or green power purchasing options for their own apartments or homes.

Concerning landmarked city-owned buildings, there are now solar panels on the rooftop of City Hall and thin film solar panels can be installed that are not visible from the street, as required for such buildings.

With regard to Section 1.d, the definition of cost-effective, I recommend factoring in the social cost of carbon as required in Int. 609a concerning geothermal for city-owned buildings. The bill, which was introduced by Council Member Costa Constantinides, was heard by this committee last year and signed into law by Mayor de Blasio on January 5.

Finally, in addition to mandating solar power on NYC-owned buildings, I recommend exploring the possibility of legislation to require solar power installations, as appropriate, on all new buildings in NYC. Solar power can assume various forms in new construction, such as solar rooftop arrays, integrating photovoltaics in the building envelope, and even embedding solar cells in window glass. Precedents for this requirement include two cities in California that have mandated solar on all new buildings (see: http://earthtechling.com/2013/08/two-california-cities-set-new-standards-for-solar-power) and a law passed in France in March 2015 that requires the installation of green roofs or solar power on all rooftops of new buildings in commercial zones. (See: http://ecowatch.com/2015/03/25/france-roofs-solar-panels-plants)

TESTIMONY OF CHRISTOPHER NEIDL,
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JANUARY 15, 2016

Thank you for the opportunity to appear before this committee and provide testimony on proposed local law no 478.

In the global effort to curb the causes and prepare for the effects of climate change in the 21st century New York has distinguished itself as a leader among American cities by making an ambitious commitment to dramatically reducing carbon emissions over the next few decades. Increasing the local adoption of clean, distributed solar technology will be a necessary component of this commitment's realization given solar's high potential for urban deployment among clean energy sources, and the rapid decline of solar equipment and installation costs that has occurred in recent years and is projected to continue well into the coming decade. Solar also has a critical long-term role to play in supporting grid resiliency and reliability objectives, and could prove to be a significant generator of local jobs if the industry is able to grow and diversify in the future.

I believe that the objectives that are proposed in Intro 478 would positively and powerfully support the achievement of the City's clean energy, carbon reduction and resiliency goals both directly by leveraging City resources and property to

facilitate an increase in local solar capacity; and indirectly, by catalyzing the growth, maturation and competitiveness of the local solar industry by creating new and significant public sector demand for solar equipment, design and installation. Therefore, as an advocate for thousands of New York City residents and businesses who aspire to invest in and derive benefit from solar energy, and as a believer in the transformative impact that solar can an should have on decarbonizing and democratizing our energy system, I fully support the Council's effort to make intro 478 local law.

However, while expressing my support I would also like to look forward, beyond the scope of the legislation that we are discussing today, which is focused on facilitating the deployment of solar on City properties. I would like to stress that the City Council can and must do much more to address the many administrative barriers that currently stand in the way of more widespread investment in rooftop solar by tens of thousands of eligible private homes and businesses throughout the five boroughs. Because, while it is certainly true tat City property collectively offers opportunities for solar deployment that are far from trivial, ultimately, it will be the adoption of solar by private, not public, decision-makers, that will play a far more quantitatively meaningful role in fulfilling the City's laudable climate, and energy objectives.

Yet, today there is a persistent and profound disconnect between those objectives and the manner in which solar projects and deployments are administered, processed and interpreted by City agencies and departments;

most notably, the NYC Department of Buildings. Specifically, the DOB's application and inspection process for construction and electrical permits for solar projects are characterized by unacceptable levels of *uncertainty, inefficiency and redundancy.* This state of affairs directly contributes to higher project costs for adopters, and a higher level of effort for industry providers, resulting in suppressed demand and investment by consumers, while causing many leading solar companies that are active in other parts of the region to essentially opt out of participating in large segments of the New York City market. Nowhere are the effects of this more adversely felt than with the city's 1-4 unit private homes; especially flat roof homes. This is a segment that absent these barriers should, in fact, be one of the most robust for solar adoption given the strong incentives that are created by high retail residential electricity rates in New York City.

Therefore, in the interest of meeting the City's long-term climate and energy goals, comprehensive and commonsense process reforms informed by national best practices and an appropriate consideration of local, place-based factors must be implemented in the near term. With my testimony I include 9 separate recommendations that have been formulated with direct input from diverse local solar industry actors and which aim to provide a specific, reasonable and highly achievable basis for such necessary reforms. If implemented, the recommendations would substantially reduce the significant added costs, time and uncertainties that characterize the current solar development process in New York City; and importantly, they would do so without compromising public safety

and property value or other core objectives of the NYC Department of Buildings. Once in place, such reforms would increase solar industry participation in the five boroughs, resulting in greater competition, lower prices, improved service, and increased innovation – in total, all of which, more than anything else, will cause solar adoption to take off and ultimately fulfill a meaningful role in the achievement of the City's core climate and energy goals.

I. Reform Recommendations for the NYC Department of Buildings

Recommendation 1: Establish a specialized Solar/ Distributed Generation (DG) Division within the DOB to process permit application intake and review, and increase transparency and rapid problem-solving. **Int. 0846-2015, which proposes a local law to create an Office of Solar Energy, provides a promising means to accomplishing the goal of this recommendation.**

Recommendation 2: Implement a simplified standard plan set template and consolidate the number of forms currently required for the application of construction and electrical permits in order to reduce unnecessary complexity, redundancy, cost and time from the permit application process.

Recommendation 3: Establish a reasonable service level agreement (SLA) for permit application approval or denial that meets or exceeds national best practices.

Recommendation 4: Establish a formal stakeholder engagement process to enable local solar industry representatives to participate in and help inform the implementation of Recommendations 1-3.

Recommendation 5: Enable solar contractors to be listed as sub-Applicants of Record on permit applications so that they can communicate directly with Plan Examiners about project-related matters, such as application status and alteration requirements.

Recommendation 6: Extend professional certification option for residential Property Tax Abatement 1-2 family home projects that are 10KW or smaller in size to flat roof properties that have been reviewed and confirmed to be fire code compliant.

Recommendation 7: Waive asbestos abatement mandates (ACP5 forms) for ballasted racking designs that do not involve roof penetration.

Recommendation 8: Waive mandatory inspection by Special Inspections Agency (SIA) for solar projects.

Recommendation 9: Discontinue the Department of Buildings' new practice (12/15) of imposing locally inappropriate $/watt price limits that do not realistically correspond to local price factors; Eliminate requirement that installers submit notarized price justifications for applicant projects that exceed imposed limits.

AIA
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The American Institute of Architects New York
Testimony before the New York City Council Committee on Environmental Protection on Intro. 478
January 15, 2016

The American Institute of Architects New York (AIANY) represents over 5,200 registered architects and associated design and construction professionals. The AIANY Committee on the Environment (COTE) aims to lead, inspire, and educate our members on design and sustainability. AIANY COTE organizes engaging programs that focus on outstanding green buildings, current technologies and product research, and sustainable design practices by leading architects. Our efforts are based on the belief that sustainability should be an essential part of the design process and be fully integrated with all aspects of a building, including form, function, site, structure, systems, and construction.

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AIANY is partaking in a sustained push for initiatives that reduce carbon emissions in the built environment and create healthy spaces for New Yorkers to live and work. In order to achieve the Mayor's 80x50 goals, both public and private sectors must undergo large-scale changes. AIANY supports Intro. 478 in its effort to encourage the elimination of fossil fuels and the implementation of photovoltaic systems by seeking to determine how NYC can better utilize solar to help reach sustainability objectives.

Intro. 478 successfully emphasizes the urgency of reducing carbon emissions in NYC's building stock and suggests a possible tool. At this point, however, AIANY has concerns about advocating for an individual technology across the board. In an effort to make this legislation as widely applicable as possible, we suggest that the best approach to achieving this would be to focus on a whole building analysis.

Instead of surveying every City-owned building for solar potential, we would advise that the survey focus on all energy efficiency and renewable generation strategies that reduce fossil fuel energy-use to zero. This would prevent the expenditure of resources on surveying City-owned buildings, such as the Municipal Building, for solar potential where the roof area to floor area ratio obviously makes that building unsuitable for solar. However, spending money to survey the building's overall energy consumption and searching for the appropriate renewable technologies given its attributes, the City would invest in worthwhile research.

We are excited for NYC to take the lead on this effort and build a strong case for all of the benefits that photovoltaic systems offer under the proper departmental leadership. Large stakeholders are experimenting with a wide range of energy saving solutions, so the time is ripe to think holistically about our next steps. We look forward to working with you on this.

Submitted on behalf of the AIANY Committee on the Environment

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Testimony on New York City Council Introduction 478
January 15, 2016

Good afternoon, my name is Alex Gleason, and I am the Policy Associate at the New York City Central Labor Council, AFL-CIO. Representing 1.3 million workers across three hundred affiliated unions, the Central Labor Council strongly supports taking action to fight climate change, and create a more resilient city. We applaud the Council and Administration for taking action to implement alternative sources of energy across city-owned buildings, and for aggressively targeting city emissions.

Ensuring our buildings are operating as efficiently as possible—while also reducing our carbon footprint—makes both economic and good sense. Public schools alone comprise 27% of the city government's energy budget, about $220 million per year[1]. Solar is one of many options, along with wind, geothermal, and (to a lesser degree) combined heat and power (CHP) systems. Any way to supplement rather than supplant the budgets of our public schools with green energy updates should be taken into consideration, and used as an opportunity to create learning experiences for the city's students.

The Central Labor Council is a member of a broader coalition—comprised of environmentalists, community activists, and organized Labor—working to create both a more resilient city, and well-paying climate jobs. Our coalition, Climate Works For All, believes the threat of climate change is an opportunity to protect our communities, and also lift the wage floor. Through quality job standards, community pathways towards apprenticeship, and smart investment, we have a plan to uplift our collective future, and build a true 21st century green economy.

The Central Labor Council implores the City Council to thoroughly review any third-party power purchasing agreements (PPAs) to ensure the city is really receiving the best deal. We encourage the city to realize savings, and invest those funds back into the schools. The last request for proposals (RFP) issued for solar installation on public schools also lacked certain labor standards, and did not include any local hire standards. We encourage the Council and Administration to use the installation of alternative energy as force for both work and community development. Thank you for your time and consideration.

[1] NYC Municipal Energy Use, at http://www.nyc.gov/html/dem/html/municipal/municipal.shtml. This includes DOE and SCA.

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NYC Council hearing 1/15/2016

Best Energy Power (BEP) is a leader solar installer in the 5 boroughs of NYC, BEP holds the biggest market share of commercial solar installations in the 5 boroughs and as such is the most exposed to the burden of getting solar project move along in the NYC terrain.

I am sure the council members know that in NYC we have less solar per individual than the rest of NYS, while NYC is the most populated place per square mile compared to the rest of the state.
Let's see why.

The biggest problem is the FDNY rules not allowing solar on the roof, and the biggest burden is implementing these rules into solar system design while lowering the goal of efficiency.

As u all well know efficiency in solar is watt per square foot, so the main problem is design max power in a restrained area of the roof.

We all agree that FDNY fire fighter safety is very important but same as soldiers modify their tactic to new development on any terrain – so does the fire fighter have to adjust their method to fight a fire when there is solar on the roof.

The main issue is the 6' clear path by the FDNY on a flat roof where nothing should be in that clear path and same on an A shape roof where we need a 3' clear path on the ridge both sides, and of course nothing allowed to interfere in that clear path.

Just think on a flat townhouse roof with a skylight or a hatch where u need 6' clear path front and back, with a 6' clear path connecting side to side, with a 3' clearance around skyline and hatch - basically u wipe out 60% to 70 % of available roof space, furthermore, if u have a vent stack or a chimney u are left with almost no space.

I am sure there are ways to adjust and work out a solution, while keeping firefighters safety in tacked.

This brings me to the next problem with the FDNY, let's assume we need a variance with the FDNY to be able to fit solar on the roof, the only way to file it - is with a hard copy, nothing electronic.
Any FDNY plan examiner has a desktop computer, how come we cannot file electronically – we are in 2016 !!
Pls understand that the only way to file it is to go physically to downtown Brooklyn and hand it over, otherwise if u send via FedEx , it will take a week from the mailroom to the roof top examiner.

When u hear that it sounds like we are in a third world country, but to remind u this is NYC in 2016 !!!

And now I want to move the next problem with the FDNY and that would be the question of who is the final authority to call what is going on the roof.
To my understanding the DOB HUB was created as a one stop shop to allow and monitor what is going on the roof.

I'll give u an example.
In 2011 we submitted a design to the DOB HUB , the comment that we received from the HUB was that we don't comply with the FDNY rules and we have to submit to the FDNY for a variance, we did so and submitted a variance with the FDNY, the FDNY told us how to adjust and change the design.
We implemented the FDNY guidance into the design and made changes according to the FDNY request.
With that we went back to the HUB, showed them the adjustment, the HUB after examining the plan in view of the FDNY request approved the new adjusted plan and we received the permit.
Accordingly we build the system.
The DOB came after we finished to location to inspect and signed off.
3 years later we received a violation by an FDNY inspector.it was an ECB violation so we had to go to court.
The violation was that we did not go back to the FDNY and showed them that we actually did what they told us to do.
This is not a joke – we had to pay fines $2500 because we did not go back to the FDNY and told them we build it the way they approved to build it !!

If FDNY had any doubt they could simply ask or sent an inspector to the site to inspect, instead they sent an inspector to site who did not even go on the roof – they just sent an inspector to write a violation – and that is why ? Because the DOB issued a permit instead of sending us back to the FDNY.
All together we have similar 15 cases - we lost all in court paying thousands and thousands of dollars due to FDNY fight with DOB of who has the final "right" to approve a solar system on the roof.

Another example is a roof without conforming to the FDNY rule, in other word a preexisting condition that solar will not make any change.
The DOB approved a solar on roof where the bulkhead door on the roof was too close to the parapet – this is preexisting condition not conforming to FDNY rules..
Solar did not make any different to that condition and yet the FDNY wrote a violation to the building because of the preexisting condition.
U cannot change the parapet on the roof and of course u cannot change the bulkhead as it is on a top of a staircase. – So what is the violation all about ? FDNY giving the approval on a preexisting condition, although adding solar does not change anything.
The whole idea of the FDNY is calling the shot by filing a variance - in other words control over the DOB.
Once we get the variance we are all clear but the catch is that we have to submit to the ECB within 30 days, the FDNY is very slow to respond, so now we miss the 30 days and we have to go to court.
The judge says that the delay of the FDNY for more than the 30 days - is not a defense and here goes another $2500 fine although we got the variance approved .

It sound like a comedy but unfortunately it this is real life !!

One more thing to add here that a variance to the FDNY cost $470 as an FDNY fee and since only a professional can prepare this - this will cost another $600 !!

A major problem in this fiasco is that the FDNY reports to the NYC Mayor, and the mayor's office does not want to deal with that.

I hope u all understand that this costing issue we have to load to the customer, and this is another reason why it is more expensive to do solar in NYC than any other place in NYS !!

We have to find an entity that will make sense to the FDNY rule and regulation and tell the FDNY to adjust to the new Era – solar must go on roofs and more solar better for us and the next generation we all live for !!

The other issue I want to address is the DOB HUB,.
Have anyone one ever seen the amount of information the DOB requires for a solar permit ?
Do u know how much unrelated information one has to submit on a solar plan to get a permit ?
What the connection between the parking next to the building to solar on the roof ?

I hope the council member understand we are talking on thousands of dollars we have to pay to the engineers to be able to submit a plan.

The solution to address all these issues are an independent solar liaison, currently we have CUNY who put themselves as the ombudsman between installers and DOB.

CUNY is doing a fine job as solar advocacy, but CUNY has a lot of conflict with solar installers and what CUNY opinion is - does not match necessary the industry.

Unfortunately the DOB commissioner does not want to hear about that, rather having direct communication of the DOB with a representation of installers, the DOB speaks with CUNY, and CUNY tells installer certain things they cannot address as they have to keep good relationship with the DOB.

I believe everyone in this room and especially the council members want to achieve a mutual goal of doing more solar in NYC – let's try all to work together to find the way to do it.

TESTIMONY OF MERRILL KRAMER, SULLIVAN & WORCESTER LLP,
BEFORE NEW YORK CITY COUNCIL
COMMITTEE ON ENVIRONMENTAL PROTECTION

JANUARY 15, 2016

I. INTRODUCTION

Thank you for the opportunity to appear before this Committee and testify on the City Council's proposal to amend the Code to require solar PV systems on municipal buildings.

My name is Merrill Kramer. I am an attorney and the Head of the Sustainable Energy Practice at the law firm of Sullivan & Worcester LLP. In addition to our other offices we have long been proud members of the New York City business community. Prior to entering private practice I served as the principal attorney at the Federal Energy Regulatory Commission's Cogeneration and Small Power Production Task Force. In this capacity I was charged with writing and interpreting rules and regulations to encourage the development of renewable energy resources and decrease reliance on fossil fuels. I have drawn on my experience on the FERC's Small Power Production Task Force in preparing my remarks to this Committee.

I have been working with a loose coalition of New York City solar industry professionals responsible for installing over 60 percent of the solar PV rooftop systems in New York City. I have drawn upon their almost universal comments and concerns in identifying the three largest obstacles to solar deployment, and in making recommendations to this Committee.

Initially, I wish to applaud this Committee and the City Council for being at the nation's forefront in bringing solar energy to municipal buildings. The Committee and Council have set a national example of government leadership and stewardship of our air, water and health. We also applaud the de Blasio Administration for its commitment to solar energy for New York City and to reduce greenhouse gas emissions by 80 percent by 2050. The Mayor's *One City: Built to Last* initiative is pro-active and far-sighted. It will result in lower energy costs, cleaner air, improved health and greater energy security for New York City and its surrounding environs.

II. SUMMARY

The three biggest challenges we see to meeting the goals of the City's Solar Initiative and making this bill succeed are:

1. The delays and bottlenecks applicants face at the DOB for obtaining an initial solar permit;
2. The cost and time it takes to obtain even minor variances from the New York City Fire Department; and
3. The need to establish a "one-stop shop" decision-making administrative body to identify problems and fast track programs and processes to expedite permitting and resolve disputes.

I will explain each one of these in turn, and offer our recommendations for resolving each of them.

III. DELAYS AT DOB

The single largest issue in bringing solar power to the City is the DOB's process of manually reviewing solar permit applications where the applicant is seeking to obtain property tax abatement for its solar installation.

To promote installation of solar PV systems, New York State in 2008 made available to City residents and businesses a property tax abatement, currently equal to 20% of the cost of installation.[1] The property tax abatement expires at the end of this year. Rooftops that are not installed and energized prior to the end of 2016 will lose this important incentive.

Prior to the 2012 extension of the property tax abatement law virtually all Type 2 solar permits in the City were issued using a "full professional certification" self-certification process. This self-service process for Type 2, relatively minor construction is available to professional engineers and registered architects. The "full pro-cert" process is self-regulating and done through an e-filing. Permits under full pro-cert typically are obtained within 24 hours.

Following the extension of the property tax abatement, the DOB started to require solar applicants seeking property tax abatement to use a more cumbersome "professional certification of objections" process instead of the self-certification process. Under the certification of objections procedure, a HUB examiner at DOB manually reviews both the solar permit application and the property tax abatement application, or PTA-4. As the number of solar applications increased, the manual examination process increased the time for permit approvals to four and six months. The inordinate increase in review time appears to be the result of the combined effects of:

1. Time consuming manual review of applications,
2. An increase in solar applications combined with a heavy turnover of examiners at HUB, and
3. An apparent inconsistency between DOB's understanding or application of some aspects of the NY Fire Department code and the Fire Department's interpretation.

The combination has created an almost insurmountable bottleneck of solar permits at HUB, triggering large numbers of solar contract cancellations and terminations.

While DOB's initial decision to use the manual review process may have been well intended, there is no legal basis in the New York City Building Code for *prohibiting* applicants from using the full pro-cert process permitted under the Code. But that is exactly what has occurred.

Section 105-02 of the New York City Department of Building's own rules, RCNY 105-02, arguably *mandates* the use of the full pro-cert process for applicants seeking property tax abatement. Department of Buildings Directive 14 also expressly authorizes use of the self-certification process.

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[1] Title 4, New York State Real Property Tax Law, §499-C.

Code Section 105-02 additionally states that the PTA-4 should be submitted *at the time of, and no earlier than*, construction sign off. The DOB however requires the PTA-4 to be submitted at the time of the initial alteration application.

The rules provide in relevant part:

> **(e) Procedure: Alteration application.**
>
> (5) If the property tax abatement application is not submitted ***together with and at the same time as the request for construction sign-off***, the property tax abatement application shall be *denied* and the Department shall not further review or process the property tax abatement application.
>
> (7) ***The date of filing of the property tax abatement application shall be the date of submission of construction sign-off documents*** and the application for property tax abatement as described in subdivision (e)(5) of this section and as recorded by the Department.

The Department of Building's Rules are very explicit:

> (e) **Procedure: Alteration application**.
>
> (1) Filing. The Department shall *not* accept a property tax abatement application ***unless the applicant of record shall have first filed an alteration application that is professionally certified and agreed to have performed by an architect or engineer the final inspection on behalf of the Department in accordance with Administrative Code § 28-116.2.4.2.*** This filing is required regardless of whether the building is new or existing and regardless of whether a prior new building or alteration application for work beyond but including installation of the solar electric generating system was filed prior to the effective date of this rule.

1 RCNY §105-02 (e)(1)

The DOB Code thus *requires* applicants filing for a property tax abatement to use the full professional certification process. However, the DOB *prohibits* its use.

DOB's use of the manual review process has resulted in a huge backlog of solar applications and increased solar costs to property owners. Based on my informal polling of solar professionals, the delays associated with the certification of objections process have resulted in cancellation or termination of *over 50 percent of all signed installation contracts* subject to the manual process. Major solar companies have abandoned the City and moved their personnel to New Jersey and other jurisdictions where permits typically are received in a couple of weeks at most. The cancellations and withdrawals from the City have resulted in industry layoffs, loss of substantial tax and fee revenues to the City, and questions regarding the Administration's ability to achieve its stated solar and carbon reduction goals. The expected rush to file solar applications in order to deploy prior to expiration of the property tax abatement in 2016 will only exacerbate the current problem.

On January 1, 2016 the DOB reinstated use of the pro-cert self-service process for applications for one and two family dwellings under 10 kw that have pitched roofs of 20 degrees or higher. The move has already begun to alleviate some of the backlog. However, it requires applicants to withdraw existing applications filed under the certification of objections process and refile a new application with the DOB. Applicants must also pay another filing fee.

The January 1 program is a start. However, the January 1 program applies only to perhaps twenty percent of eligible solar rooftops in the City. For example, a rooftop having a 10 degree pitch, and dwellings of more than two families, must continue to use the longer manual certification of objections process.

I wish to underscore that, under the New York City Code and applicable DOB directives, particularly Directive 14, *all* Type 2 alteration applications should be entitled to use DOB's full professional certification process. Arguably the full professional certification process is *mandated* under the Code for applicants filing for property tax abatement.

Directive 14 for relatively minor Type 2 alterations was necessitated by the historical fact that the volume of construction in the City grew far in excess of the number of available City examiners. The City therefore enabled New York licensed professional engineers and registered architects to self-certify that the alteration plans complied with the Code and applicable laws. The applicant remains responsible for non-compliance with the law, including the Fire Code.

However, the DOB *prohibits* use of Directive 14's self-certification process for solar applicants that file for the property tax abatement. Thus, the single largest problem facing solar deployment in New York City will go away practically overnight if the DOB were to allow use of the full professional certification process for all solar PV rooftop applications.

IV. FIRE DEPARTMENT DELAYS

The second major issue arises from the cost and delays resulting from the current antiquated system used by the Fire Department for granting variances.

Not infrequently, solar installers must obtain a minor variance from the Fire Department. For example, the Fire Code requires buildings under 100 feet tall with a roof slope 20 degrees and under to provide a 6 foot wide and 9 feet tall clear path from front to back and side to side. Three foot wide access must be provided around scuttles, skylights, fire escapes and ladders. A 6 foot wide clear radius also is required around roof doors.[2] One foot clearance is required around vents and skylights.

For a modest home, by the time these paths are "clear" there is little room left on the roof to meaningfully put in solar.

I have the utmost respect for fire fighters. They put their lives on the line every day for us. They are true heroes. The events of 911 provide us with a constant reminder of this fat.

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[2] Fire Code Chapter 5, Sections 504 and 512.

At the same time, New York City has one of the strictest fire codes in the country. The international model fire code, for example, only requires a 4 foot wide clear path.

We have engaged the Fire Department in discussions to find ways to accommodate solar roof arrays and advance the Administration's solar initiatives. In certain circumstances the Fire Department currently will allow home and building owners to reduce the 6 foot clear path requirement. The Fire Department also frequently grants a variance where a small conduit or pipe might protrude from the roof and technically violate the clear path requirement.

Unfortunately, the Fire Department has no process in place for handling minor variances or categorical variances that are relatively noncontroversial. The Fire Department does not even have an electronic process for e-filing requests, or a centralized office or process for filing for variances. An applicant must physically type out and run off multiple copies of his/her request for variance, travel to the correct local FDNY office, and manually file the application at that location. The local office then manually distributes copies of the application to the appropriate internal offices for review - a process that can take more than a month. Each variance request can cost $500 and upwards, plus the cost of revising architectural and engineering designs. Variances may only be filed by professionals. If the Fire Department requests additional information, the whole process can start all over again.

The system is a throw-back that reminds me of my early days at FERC - where mounds of redwells and twenty copies of each application piled up in the Secretary's Office which then were walked around and distributed to the appropriate offices, and then distributed by the offices to the appropriate reviewer in each office. With modern technology - and in the spirit of the City's 311 program - the process could and should be streamlined.

V. FRAMEWORK FOR DEVELOPING EXPEDITED PROCESSES AND PROGRAMS

The third and perhaps most important problem universally raised by solar applicants, installers, developers, engineers, architects and contractors is that there is no framework within the Administration with which to identify, discuss, manage, improve and implement processes and programs for streamlining procedures and resolving disputes.

VI. RECOMMENDATIONS

To resolve these three issues, we respectfully recommend that the following proposals be considered as part of this bill or by separate means:

1. Reinstate Use of Full Professional Certification for All Solar Rooftop Installations. Directive 14 and the City Code are very clear – the HUB's full pro-cert process should be available to all Type 2 solar permit applications that are seeking property tax abatement. Arguably pro-cert is mandated. No new law is required. It is nonsensical, not to mention arbitrary and contrary to law, to treat two identical applicants with two identical solar rooftop layouts differently, because one of the homeowners is seeking property tax abatement. Solar installers are foregoing applying for tax abatement because they cannot afford the additional time and expense associated with the longer application process.

Solar installers are foregoing the 80 percent of the homeowners and businesses that don't fit within the January 1 order. The City Council should add a provision to the current bill to make use of the full professional certification authorization for all property owners clear.

2. Require E-Filing and Other Automated Procedures to be Implemented at FDNY. These procedures should incorporate a process for expeditiously handling minor and routine, categorical variances. This is not a complicated process.

Regarding expediting routine and categorical variances, there are numerous models from which this Committee can draw.

- For example, at FERC implemented a dual procedure under which a routine project could self-certify. The process was self-implementing. The self-certification was publicly posted and made final if there were no objections filed within 30 days. The process could be adopted for categorical variances, with the Fired Department having 30 days to raise objections.
- The FERC also adopted a procedure where routine orders are issued through delegated authority rather than having to go through formal Commission approval. A similar delegated authority process can be established at the Fire Department. An appropriate official could be authorized to issue approvals for safe harbor, categorical and minor variances. Under such a procedure, the office would be required to issue such variances within, say, 15 days. Failure to act within 15 days would be deemed acceptance of the request. The public then would have a 30 day opportunity to challenge the issuance. The process, ideally, could be implemented through an on-line e-filing procedure.
- Another available model is the process incorporated in the old Public Service Law Article VIII rules that were used for siting new electric generating plants. The law established a "one-stop shop" independent Siting Board for construction of new power plants. The Siting Board's authority overrode all other local laws and ordinances and had sole jurisdiction to issue certificates of public convenience and necessity.

3. Establish a Solar Task Force. We recommend creation of an *ad hoc* Task Force composed of empowered representatives of the Administration, together with representatives of the solar industry and consumer, business and environmental interests. The Task Force would be charged with establishing a framework for 1) identifying and improving processes and programs to expedite solar installations and lower the cost of such installations, 2) establishing procedures and processes for resolving disputes and 3) heightening awareness in the community of the value of installing solar. To ensure that the Task Force has "teeth" the administrative officials designated for the Task Force should have sufficient seniority and authority to make binding decisions. We recommend that deadlines be imposed for establishing the Task Force and for taking actions. In short, the Council should ensure that the Task Force has authority to effectively tackle obstacles and further the goals of the Administration.

VII. CONCLUSION

We are encouraged by the Council's leadership and environmental stewardship. The steps I have outlined today to eliminating the key obstacles to use of solar power in the City will have the effect of allowing more and more New York City residents to convert to solar power, reducing the costs and burdens on the City, increasing employment, improving the air, and making the Mayor's solar initiative a success.

I thank the Committee for your time and attention today. I look forward to working with you on these important issues.

I will be pleased to answer any questions of the Committee.

January 15, 2016

New York City Council Committee on Environmental Protection

Dear Chairman Constantinides:

My name is Ling Tsou. I'm a co-founder of United for Action, a grassroots group in New York City advocating for renewable energy.

Thank you for holding a hearing on Int. 478. We welcome and support this bill. However, we note that while this bill requires the citywide administrative services to install solar photovoltaic systems on city-owned buildings, including public schools, it does not set out a specific time table for the completion of the installations. We recommend that this bill be amended to add specific time tables for the completion of the installations on city-owned buildings by each community district until the installations are done on all city-owned buildings. Without specific time table for installations, this bill may not help us reach the city's stated goal of reducing greenhouse gas emissions 80X50. A map of all completed solar installations on a city-wide basis should be made available to the public on the city website.

2015 was the hottest year in our planet's recorded history, smashing 2014's record heat. We believe the city's 80X50 goal is not enough to help avert possible climate disaster. We ask New York City to adopt a goal of powering the city by 100% renewable energy by 2030. We can do this by energy conservation, energy efficiency and bold investments in solar and wind power. Int. 478 is a good starting point. In addition, we urge the city to select offshore wind in its forthcoming RFP to help get the process started for building the offshore wind farm off the coast of Jones Beach. Investing in solar and wind would financially benefit the city because renewables are getting cheaper while power from fossil fuels is becoming more expensive. Wind power is now comparable in price to fossil fuels, and solar is well on its way.

It is critical that the city does not achieve its goal of reducing greenhouse gas emission 80X50 by continued reliance on nuclear power and/or continued expansion of natural gas or any form of fossil fuel infrastructure. Nuclear power is not clean nor carbon free with its radioactive and toxic wastes. We need to close down the aging and dangerous Indian Point nuclear power plant, only 25 miles north of New York City. We ask the City Council to schedule a hearing and pass Res 694 calling for closing of Indian Point. We also ask Mayor De Blasio to announce that Indian Point needs to be shut down immediately.

We need to take urgent actions to avoid the most devastating effect of climate change. New York City must lead in this effort.

Thank you.

Ling Tsou
United for Action

New York City Council- Int 0478-2014 - Hearing 1:00 Jan. 15, 2016

Photovoltaic Systems for City-owned Buildings; Committee on Environmental Protection
Testimony of Catherine Skopic, Legislative Committee - Chair, SDIPN; Co-Chair, PCM-NY

Congratulations, members of the NYC Council and thank you for writing and sponsoring this legislation requiring photovoltaic systems on city-owned buildings. My name is Catherine Skopic, Legislative Committee Chair for Shut Down Indian Point Now.

December 12, 2015 marked a turning point in the global climate crisis at COP 21 in Paris. We didn't achieve everything we need to reduce GHG as quickly as necessary, but 195 countries signed the agreement - something new. A beginning has been made.

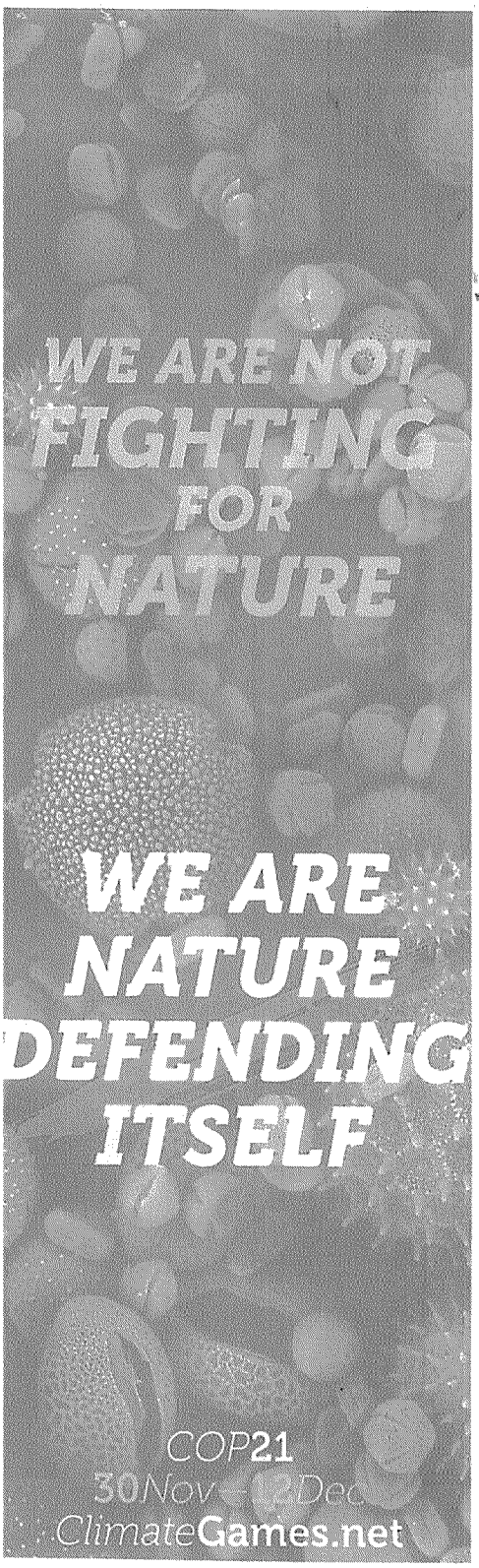
Here in New York City, we have a rejuvenated effort to reduce our own GHG to do our part locally and globally. Placing solar systems on city-owned buildings will go a long way to accomplish this and is in harmony with One NYC. The CUNY Solar Map will help.

This legislation mandating a report to the Speaker and Mayor for each community district with the number of city-owned buildings within the district that are appropriate for solar, where solar is already installed, the cost-effectiveness and factors affecting solar system cost-effectiveness is significant in that identification of solar-appropriate buildings is a necessary first step to accomplishing goals set out by One NYC and reducing our carbon and methane emissions.

As we are in the greatest challenge our planet has ever faced in regard to climate, I suggest an addition to this legislation that would also require a measurement and reporting of the reduction in greenhouse gas and methane these solar systems provide.

In talking with solar installers, I discovered that there is a need for more solar inspectors to meet the required regulations at each step. I suggest that monies be made available to train more solar inspectors so that the solar installations on city-owned buildings can move forward at a faster pace. These workers can be locally trained and hired with an eye toward environmental justice. More solar installers will probably be needed, as well.

Thank you again, for the significant role you have played with this legislation contributing to the needed reduction of greenhouse gases and methane, getting us closer to where we need to be if our planet is to continue supporting life.



PARIS2015

CONFÉRENCE DES NATIONS UNIES
SUR LES CHANGEMENTS CLIMATIQUES

COP21·CMP11

1P FRI 1.15.16 hearing testimony Denise Katzman * EnviroHancement™

Int. No. 478, A Local Law in relation to requiring photovoltaic systems on city-owned buildings

Solar power is a vibrant source of energy, which will ensure a healthy sustainable planet for ALL. This hearing will finally *Let the Sun Shine In.* The City is moving in the appropriate direction.

Solar and ESS (Energy Storage Systems) make an ideal Duet, which the City can easily accommodate. ESS is a positive metric to scale up solar power that can operationally defeat Anthropogenic Global Warming.

Ties that bond: Latest breakthrough in thermochemical energy storage - SmartGridNews 11.4.15

NYSERDA Announces Support for Seven NY-Based Energy Storage Projects to Expand Customer Energy Choices under Reforming the Energy Vision - NYSERDA 5.27.15

Sound Off: Energy efficiency and renewable tax credits 12.23.15

ITC was saved. As I have informed, for many years, we shouldn't rely on subsidies. The timelines are extremely short. Benefits will be derived from fundamental progressive solar expertise resources.

http://blogs.wsj.com/japanrealtime/2015/03/09/japan-space-agency-takes-step-forward-in-space-based-solar-power/

Japan is leading via technology to create Orbital Solar Farms.

By intensifying clean sustainable energy, we shall protect/preserve human, enviro and economic health worldwide.

Our birthright entitles us to maintain a healthy sustainable planet.

Thank You.

Contact:
January 14, 2016
Contact:
Ya-Ting Liu
(212) 361-6350 x203
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Statement of Ya-Ting Liu Director, NYC Sustainability Program
New York League of Conservation Voters
Committee on Environmental Protection

Intro. 478-2014
A Local Law to amend the administrative code of the city of New York, in relation to requiring photovoltaic systems for city-owned buildings.

Good afternoon. My name is Ya-Ting Liu, New York City Program Director at the New York League of Conservation Voters (NYLCV), a statewide environmental group with over 25,000 members in New York City. We are committed to advancing a sustainability agenda that will make our people, our neighborhoods and our economy healthier and more resilient. Thank you for the opportunity today to testify on Intro 478, a bill that would require comprehensive solar installation research and the installation of cost-effective solar photovoltaic systems on city owned buildings.

In September 2014, the Administration issued "One City Built to Last," which includes a goal to expand solar on City rooftops. The City's goal of installing 100 MW of solar capacity on more than 300 City-owned rooftops over the next ten years begins with Intro 478, the assessment, evaluation and identification of all solar-ready city owned buildings across a diverse portfolio of more than 4,000 buildings.

We applaud the efforts of Mayor de Blasio and the City Council to lead by example and show that they are willing to prioritize investments that lead toward 80% greenhouse gas reductions by 2050.
The City has already taken steps to understand energy use in its portfolio of buildings and to identify strategies for cost-effectively achieving efficiency and reducing emissions. Since 2014, the Administration has announced a series of solar expansion initiatives and accomplishments. To date, the City has installed more than 4.2 MW of solar on public buildings including City Hall, 16 schools, and major facilities like the Port Richmond Wastewater Treatment Plant. An additional 4MW of solar projects is underway on 17 other schools. Last September, the Administration released an RFP to solicit at least an additional 15 MW of solar on public buildings.

According to the 2014 GHG Emissions Inventory, City government is targeting a 35% reduction in emissions from City government buildings by 2025, and Intro 478 is an important tool toward that goal. NYLCV recommends that the Council work with Department of Citywide Services and experts in the space of building design and engineering, for example, American Institute of Architects New York, Urban Green Council and Solar One, to find a more cost effective and efficient way of assessing which city buildings are ripe for solar.

We applaud the Mayor and the City Council for your leadership on renewables and look forward to working with you to toward these ambitious but necessary goals.

Testimony Before the New York City Council – 01/15/16

RE: Int. No. 478, A Local Law in relation to requiring photovoltaic systems on city-owned buildings.

Comments Submitted by :

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516-376-0404 cell

The proposed law is unquestionably a sensible way to protect the NYC government from future rate increases for power and will deliver the public benefits of reduced strain on the Con Ed system and reduced carbon output. However, a piecemeal building by building approach and public only funding make this projects cost much higher than need be and does not guarantee the city will realize the atual expense reduction made possible from the PV implementation.

The purpose of this communication is to propose alternative approaches to the implementation that will:

1. Optimize efficient utilization of city owned rooftop space
2. Enable lowest cost of implementation
3. Achieve consistent and actionable metrics to gauge the program success and identify opportunities for improvement in program effectiveness.

My recommendation is based on sound business practice and application of currently available "community solar" and remote net metering concepts already in practice and apply them to PV power installations to power NYC facilities.

The key components of any NYC government plan should include the following:

1. Optimize efficient utilization of city owned rooftop space

a. Recognize that the City Owned Buildings (COBs) will have different solar opportunities. Aside from shading or other physical characteristics of a particular site, there are very good reasons to think beyond the proposed "one-roof system offsetting power in that same building" approach.

b. Organize City Buildings from largest to smallest square footage of rooftop. Review the buildings in that order for their solar potential. Target these largest buildings for a first round of installation.

c. You will find that many large buildings have low relative power requirements. They cannot use as much power at that facility as they could produce. Conversely, the buildings with the smallest rooftop solar opportunity will frequently be the ones with the greatest power requirements, that are well below the capability of that buildings production capacity.

d. Using existing Con Ed rules, the production from any COB can be credited to the city in aggregate. These buildings can be applied to the total NYC Government electrical bill as managed by DCAS.

e. The city council may need to authorize changes in how interdepartmental billing occurs, but currently all city buildings pay DCAS via inter-agency transfer accounting. If the agencies have their electrical budget reduced by PV power reducing their bill, those savings will accrue to the agencies budget and will NOT support a true savings to the city. This proposed centralized accumulation of value for the PV power produced by city owned buildings can then be applied to paying Con Ed centrally and thus savings can be quantified and managed. The realization of savings will also be ensured.

2. Enable Lowest Cost of Implementation

a. Structure a Public –Private Partnership , such as those EDC has constructed with Private firms, such as Goldman Sachs. The purpose of this is to enter into a funding relationship that will enable the monetization of some percentage of the 30% ITC and the 100% MACRS depreciation. This can reduce the cost of the project by 25% or more by leasing the power from a Public-Private Partnership that can use tax equity to reduce total costs of construction.
b. Volume buying lowers costs. I recommend organizing work into minimum blocks of 3-4 MW across multiple COBs, starting with the largest. Central project buying and material management will minimize costs per project.
c. The Public-Private Agency should also manage construction, construction expenses and maintenance.
d. I suggest that the metric used for the selection of a Partner would be the LCOE or Long Term Cost of Energy proposed for the full Fleet of COB's. This measure includes investment in construction, business operations, Maintenance, cost of capital and disposition of retired equipment over the term (20-25 years).
e. The City can buy energy from this Public-Private partnership at a fixed and predictable rate, that includes a typical savings of about 4-6 cents per kWh, equivalent to about a 30% savings versus paying Con Ed.
f. Include Resilience and Demand Cost reductions by including commercial Battery Storage Systems for all possible COBs. Demand reduction can lower Demand costs by 25-40% depending on building usage demand profile.

3. Aquire and Provide Consistent and Actionable Metrics to gauge the program success and identify opportunities for improvement in program effectiveness.

a. Report quarterly target implementations and net effective implementations in terms of Total K=kWh, Dollar value of power produced, cumulative production capacity
b. Report Quarterly on Savings credited to City by Solar production or savings from PPA versus current Con Ed Tariffs to document savings.
c. Individual site usage of solar power measurement is irrelevant, it would be very costly to monitor every COBs power consumption by month and reconcile that with the solar production from that site to measure savings. Better for the city that we measure production and value centrally where the bills are paid.

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 478 Res. No. _____

☑ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Ling Tsou

Address: _____

I represent: United for Action

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 0478 Res. No. _____

☑ in favor ☐ in opposition

Date: Jan 15, 2015

(PLEASE PRINT)

Name: Chris Neidl

Address: _____

I represent: myself

Address: Brooklyn

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 0478 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Lisa DiCapua

Address: 325 West 93rd Street

I represent: NYCLU

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. ~~0478~~ 478 Res. No. _____

☑ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Catherine Skopec

Address: 140 West Broadway, NE, N.Y. 10013

I represent: Shut Down Indian Point Now

Address: The People's Climate Movement, N.Y.C. (Shut Down Indian Point Now)

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 478 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Josh Kellermann

Address: 50 Broadway 29th FL

I represent: ALIGN

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Merrill Kramer

Address: 1666 K ST N.W. WASHINGTON D.C.

I represent: Solar developers + installers

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 478 Res. No. _____

☒ in favor ☐ in opposition

Date: 478, 1/15/16

X

(PLEASE PRINT)

Name: John Lee

Address: 253 Broadway, 7th Floor 11217

I represent: _____

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 478 Res. No. _____

☒ in favor ☐ in opposition

Date: 1/15/16

(PLEASE PRINT)

Name: Ellen Zielinski

Address: 246 Cornelia St Apt A1, BK, NY 11221

I represent: City of New York, DCAS

Address: 1 Centre Street, 17th Fl NY, NY

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THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 478 Res. No. _____

☒ in favor ☐ in opposition

Date: 1/15/16

(PLEASE PRINT)

Name: Alexander Gleason

Address: 275 7th Ave 18th fl

I represent: NYC Central Labor Council, AFL-CIO

Address: 275 7th Ave 18th fl (agleason@nyclc.org)

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: BONNIE MANDLEY

Address: 20 W FAIRVIEW VALLEY STREAM NY

I represent: DEST ENERGY POWER (DEP)

Address: _____

Please complete this card and return to the Sergeant-at-Arms