

CITY COUNCIL
CITY OF NEW YORK

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TRANSCRIPT OF THE MINUTES

Of the

COMMITTEE ON ENVIRONMENTAL PROTECTION

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B E F O R E: COSTA G. CONSTANTINIDES
Chairperson

COUNCIL MEMBERS: Stephen T. Levin
Rory I. Lancman
Donovan J. Richards
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A P P E A R A N C E S (CONTINUED)

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Michael Yee, Treasurer
Local Union No. 3, International Brotherhood of
Electrical Workers and Director, Educational and
Cultural Trust Fund of the Electrical Industry
Appearing for:

Chris Erikson, Business Manager
Local Union No. 3 IBEW

- and -

Steven Gianotti, President,
NYC National Electrical Contractors Association

Benjamin Arana, Business Representative
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Samantha Wilson, Energy Policy Analyst
Natural Resources Defense Council

Ruth Hardinger
Damascus Citizens for Sustainability

Richard Keiser, CEO
Level Solar

Dan Hendrick, Director
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Chris Niedl, Director
Here Comes Solar

Ronnie Mandler, President
Best Energy Power

Dennis Phayre, Director
Business Development
Enter Solar, LLC.

Jeff Lord, Vice President
Project Development
Clean Energy Collective

Luca Massseur (sp?)
Chia CDC, Queens

[sound check, pause, background comments,
pause]

[gavel]

SERGEANT-AT-ARMS: Quiet, please.

CHAIRPERSON CONSTANTINIDES: All right,
good afternoon. I am Council Member Costa
Constantinides, Chair of the Environmental Protection
Committee, and today's hearing focus is--focuses on
facilitating solar energy adoption in New York City.
Before I read my opening statement, I just want to do
a quick bit of housekeeping. If anyone who is
interested in testifying today has not yet filled out
a card or slip up front, now is the time to do so.
Please do that right away. Thank you. New York City
has enough solar radiation resources to move away
from its dependence on fossil fuels and the burdens
that that brings, but to accomplish that aim, we need
to take courageous steps to facilitate solar--solar--
-solar energy adoption. On December 14th of 2014,
New York City enacted Local Law 66, requiring the
city to reduce citywide greenhouse gas emissions by
80% relative to 2005 levels by the year 2050.

According to the most recent inventory of New York
City greenhouse gas emissions relative to 2000--as of

2014, citywide emissions have been reduced by 11.7%. Emissions reductions achieved thus far have largely been the result of power plants switching their fuel sources from carbon intensive coal to relatively cleaner natural gas and the construction of new more efficient natural gas [coughs] fired power plants within and outside of the city. The great majority of emissions reductions occurred prior to 2012, and since then the rate of reductions has slowed even increased in some years and tends to track closely to the seasonal fall and rise of temperatures. The city's stock of one million buildings is responsible for the majority of our emissions. Given this and the fact that most of existing buildings are expected to remain beyond the Year 2050. The city's building sector represents our largest opportunity to reduce citywide emissions and thus is the focus of many greenhouse gas reduction initiatives. In 2014, of total citywide emissions due to building operations around 46% were caused by on-site natural gas use; 39% by electricity use; 11% by heating oil use, and the raminding--remainder from other sources. One way to remove submissions from buildings is increasing their reliance on the renewable sources of energy

such as solar. This can be achieved by integrating large scale solar projects into the mix of our sources that supply electricity to buildings or by installing solar energy systems on site directly on buildings to provide supplemental electricity or heat. Mayor Bill de Blasio's Administration has set a goal to install 100 megawatts of solar photovoltaic capacity on city-owned property, and support the development of 250 megawatts of solar PV on private property. Through hoop purchasing, and community shared solar projects by 2025. This is a total goal of 350 megawatts of solar citywide. As of the writing of this report, nearly 75 megawatts of solar have been installed citywide so far: 9 megawatts on city-owned property, 65 megawatts on private property. Over the last year, the de Blasio Administration has initiated measures intended to facilitate the adoption of solar energy in the city. In particular, the Department of Buildings has taken steps to reduce the turnaround time for solar PV plan reviews, reducing turnaround times from four to eight weeks to less than two weeks. DOB has made the following in-process improvements:

1. Their Electronic Application Review

Division Development Hub made a project advocate available to provide individualized support to applicants with an emphasis on producing quicker review of solar applications. DOB clarified how property owners and solar--in flood zones can add solar detailing an exempt--an exemption in the Building Code regarding flood resistant construction. DOB has also made it simpler for solar--smaller solar projects to obtain permits by expanding the type of solar projects that are eligible to receive professional certification rather than requiring approval from a DOB plan examiner. Allowing registered architects and professional engineers to certify against their licenses that plans submitted to DOB are in full compliance with applicable regulations. And the Fire Department has reduced the threshold that differentiates flat and pitch roofs from 20 degrees to 9.5 degrees because the Fire Code allows rooftop equipment such as solar panels to cover--cover more surface of a pitched roof than a flat roof. In April of 2016, Mayor de Blasio launched Solarize NYC, which is a citywide program intended to increase access to solar energy through

community group purchasing campaigns over the next nine years. In this program, community is defined loosely. It maybe a geographic unit such as a block or a neighborhood, and affinity groups such as Business Improvement District, labor union or house of worship or otherwise. Such communities can apply to Solarize NYC and successful applicants will partner with sustainable CUNY, the City University of New York, the Mayor's Office of Sustainability and Economic Development Corporation design individualized Solarize NYC campaign, select solar installers and pursue a solar purchasing project. Finally, the Council passed and Mayor de Blasio enacted Local Law 24 of 2016 requiring the Department of Citywide Administrative Services to examine the roof for each city-owned building to determine whether it be cost-effective to install a PV system, the size of the system that could be installed, and to report publicly on the progress of installing solar energy on city-owned buildings. We fully support the Mayor's commitment to solar energy installation on city roofs, and we see no other alternative to electric energy production in urban areas. Of course, we are not alone. Everyone from

President Obama, who installed solar panels on the White House to scientists throughout the earth to environmental groups, to ordinary citizens agree that alternative energy and solar energy in particular is a critical--critical step forward towards energy stability--stability and improved environmental quality for Americans. Today's hearing really is about finding--we've talked about this before, but if we can make it as easy to be green as it is to have traditional sources of energy, and to really streamline our processes to allow individual New Yorkers to install those. To make those green choices those green values rather than having either obstacles that are related to time, which is extremely valuable and you really can't quantify it, and money, which can be quantified. If those two things are no longer an obstacle to solar and other green installations then I think New Yorkers will make those green choices based on those green values. So that's our goal today is to--to hear from the Administration, to hear from Con Edison, to hear from the local--some of our local unions, to hear from energy providers and solar installers and--and citizens today to see how we can do better, and

really, you know, move the ball forward even further than we've done so far. So I've cited what we've done so far, but let's see how we can even, you know, move it even further, go even farther and push it even further. So for that, I look forward to hearing from the Administration. Before that, I--I will recognize my colleagues on the committee. We have Rory Lancman from Queens, and we have Donovan Richards also from Queens. So we are--Queens is well represented today. With that, I'll--I'll turn it over to our Administration.

ANTHONY FIORE: [cough] Good--

CHAIRPERSON CONSTANTINIDES: Oh, Samara, if you can please swear the witnesses in.

LEGAL COUNSEL: Please raise your right hands. Do you swear or affirm to tell the truth, the whole truth and nothing but the truth today?

ANTHONY FIORE: Yes. Good afternoon Chairman Constantinides and members of [coughs] the Committee on Environmental Protection. My name is Anthony Fiore and I'm Director of Energy Regulatory Affairs for the City of New York, and I lead the Energy Supply Group in the Mayor's Office of Sustainability. I'm joined today by Benjamin Mandel,

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2 Renewable Energy Policy Advisor in the Mayor's Office
3 of Sustainability directly on my left; Tria Case,
4 University Director of Sustainability at the City
5 University of New York on my right; and on my far
6 left Carli Weigaud, Project Manager for Urban
7 Innovation and Sustainability at the New York City
8 Economic Development Corporation. We are pleased to
9 have the opportunity to discuss with you the great
10 strides that have been made on adoption of solar
11 energy within New York City, which has tripled since
12 the beginning of 2014 as well as the outlook for even
13 greater market penetration. I think you've said most
14 of what I was going to say in my testimony. So in
15 theory we could skip right to Q&A, but at--at the
16 risk of--of being redundant, and if you'd just bear
17 with me I think--I think some of that actually really
18 deserves mention again. So bear with me and I'll--
19 I'll go through it.

20 CHAIRPERSON CONSTANTINIDES: Sounds good.

21 Please go.

22 ANTHONY FIORE: In One City Built to
23 Last, Mayor de Blasio not only committed New York
24 City to reduce its greenhouse gas emissions 80% below
25 at 2005 baseline by 2050 our 80 by 50 goal, he also

set out ambitious solar deployment targets for the first time in city history. In One City, the Mayor announced that by 2025, New York City would install 250 megawatts of solar power on private property and another 100 megawatts of solar on public property. When these goals are met, solar energy will generate 435 gigawatt hours within the city each year. That's enough to power more than 92,000 New York City households and avoid more than 125,000 metric tons of greenhouse gas emissions. One City also provided funding for the New York City Solar Partnership, a collaborative of CUNY, the New York City Economic Development Corporation, and the Mayor's Office of Sustainability to spur greater adoption of solar energy with emphasis on expanding access in communities that have historically faced financial, technical or other barriers. We recognize the imperative of expanding access to solar energy in order to spread the environmental and economic benefits it produces to a broader range of New Yorkers. Distributed solar energy offers a great promise to reduce the city's reliance on fossil fueled power plants with corresponding benefits on air quality and our greenhouse footprint. Solar

energy also makes good financial sense in New York City where solar rays can significantly offset demand for some of the nation's most expensive electricity. The Administration emphasized the importance of distributed solar energy by identifying the expansion of decentralized power production, namely rooftop solar photovoltaic or solar PV as the major strategy to achieve 80 by 50 in last year's One NYC Report. As the Mayor's Office of Sustainability works to develop an integrated 80 by 50 action plan, we are advancing the solar agenda by promoting community scale distributed energy solutions by assessing viable opportunities for strategic deployment of community energy including rooftop solar, community shared solar and solar thermal among other energy resources. New York City can reduce its reliance on centralized fossil fuel power plants both in city and beyond the five boroughs that drive up the city's greenhouse gas footprint and degrade the region's air quality. Our 80 by 50 Action Plan is due out this September. At the beginning of the de Blasio Administration there were just 25 megawatts of solar installed citywide. Just 2-1/2 years later that amount has more than tripled to 76 megawatts with 68

megawatts installed on private sector buildings across more than 5,000 total installations. Staten Island is leading the borough for private solar installations with more than 3,000 of those installations accounting for 27 megawatts. In total, the city's solar market has a combined economic value of around \$350 million, \$97 million in 2015 alone, and \$49 million so far year-to-date in 2016. A leading factor in the exponential rate of solar adoption is that the cost of going solar in New York City has moderated in recent years, and is now nearly on par with neighbor--with neighboring regions. In 2009, it cost an average of \$10.53 per watt for solar installations in New York City bringing the total cost of a typical brownstone solar installation of about seven kilowatts to over \$73,000 before incentives. As of--at the end of the first quarter of 2016, the New York City average price had declined to just 8% more than Westchester prices at \$4.44 per watt, which represented a 58% decrease since 2009. Now, that same seven kilowatts total in--installation would cost just over \$31,000 before incentives. Available incentives can significantly reduce the cost of solar PV systems for New York City residents.

For starters, there is a 30% investment tax credit offered by the federal government, which Congress has extended through remaining at 30% through 2019 before eventually stepping down to 10% after 2023. In addition, NYSERDA offers a variable incentive under the New York Sun program called the Megawatt Block. Currently, at 50 cents per watt for residential installations in the Con Edison service territory. NYSERDA has also recently added an affordable solar incentive, which doubles the megawatt block incentive and up to 6 kilowatts for homeowners with total household income less than 80% of the area median income. Once these New York incentives are applied, New--New Yorkers can claim an additional tax credit from New York State, the lesser of 25% of the remaining cost or \$5,000. In addition, the New York City Solar Property Tax Abatement can shave another 20% over four years. After these incentives, a 7 kilowatt system that would otherwise have cost over \$31,000 cost just over \$10,000 or \$8,000--\$8,400 in the Affordable Solar Incentive supplies. While the property tax abatement is due to expire at the end of this year, the city has submitted a letter of support to the State Legislature to extend it until 2019

drawing on analysis from sustainable CUNY showing the outside impact that incentives have had on the City's budding solar market. Further improving matters is the emergence of financing options that allow building owners to go solar with little or no money down. In these models, a third party such as a solar developer owns and maintains the solar panels, the customer pays over time through either a fixed lease or a variable power purchase agreement. These third-party ownership models had expanded the possibility of solar power to those who lacked the capital needed for an outright purchase. Both the substantial reductions in solar costs and the significant uptick in solar adoption can be attributed in part to the efforts of the New York City Solar Partnership, a collaboration among city entities spanning academic, economic and policy perspectives. The solar partnership was formed in 2006 to jump start the nation's solar marketplace in New York City. The combination of CUNY's market and data analysis skills and credibility as an objective third party that brings stakeholders to the table along with the Mayor's Office and EDC's focus on policies that support--support sustainable--sustainability and

economic development, has laid the groundwork for exponential growth in New York City's solar market. At the beginning, the partnership worked to ensure that there were certified solar installers to serve the early adopter market, and assisted the fulfillment of interconnection requests to Con Edison. Thanks in large parts to these efforts of the partnership, the number of solar companies active in New York City have shot up from five in 2005 to 55 in 2015. These and other companies doing business in New York City support a robust workplace of more than 2,700 good paying steady jobs in the city. Among these, 21% are--are minorities; 27% are women; and 19% are unionized workers. Solar jobs typically only require a high school degree or equivalent, involve only moderate on-the-job training and confer highly transferrable skills. Nationally, solar installers are on a median wage of \$21 per hour, which is more than \$3 about the total U.S. workforce median wage. Now that Solar PV is hitting the mainstream, the New York City Solar Partnership has pivoted its focus from jump starting the marketplace to smoothing the remaining frictions that prevent large scale adoption. With solar costs lower than ever and more

financing options available, a remaining barrier to adoption is lack of familiarity with solar energy products and the available financial incentives and products that people can take advantage of. For those reasons, Mayor de Blasio announced last month launch of a new citywide program for community led limited time group purchasing campaigns for solar PV called Solarize New York City. These types of group purchasing programs educate community org-- organizations, reduce customer acquisition costs for installers and have resulted in price reductions of 10 to 20% nationwide. Through Solarize NYC, the solar partnership will provide funding, marketing and outreach materials and technical assistance to community partners in two phases each year over the next decade. We are currently accepting letters of interest from communities wishing to apply for their own solarized campaign, and will select partner communities for the fall 2016 campaign by early summer. This program builds upon the--the success of the partnership's solarized Brooklyn Community Board 6 pilot program, which generated over 400 site assessments, and will surpass the campaign's goal of 150 kilowatts of installed solar at a discounted of

near--nearly \$2.00 per watt relative to local average. We expect that Solarize New York City can significantly increase solar adoption throughout the city and catalyze our progress toward the 250 megawatt goal by prioritizing outreach and resources to communities that have historically had limited access to clean energy. Still, rooftop solar is generally on an option for those New Yorkers who own buildings with roofs that are in good--in a good state of repair or largely unshaded by other structures and are mostly free of other rooftop equipment. Community shared solar projects also called solar gardens have recently been enabled by New York State regulations and offer a path forward for renters and those without suitable rooftop to enjoy solar energy access. Community shared solar projects generate enough electricity to allow multiple subscribers whether they're located on site or remotely to claim a share of project output as a credit against their monthly electric bills. With limited available real estate for large solar arrays in New York City, the solar partnership has engaged with communities, developers and utilities to facilitate proof of concept of this model in the

city. Earlier this year, the partnership issued a request for information to identify barriers to and opportunities for community shared solar in New York City, and we are now working to facilitate the most interesting ideas that came out of that process. Notably, Brooklyn's Community Board 6 was so motivated from their solarized experience that they have again teamed with sustainable CUNY as well as Solar One to launch Sun for All, a new program that matches interested community shared solar subscribers with potential community shared solar hosts and developers in addition to the more standard rooftop solar option. Along side these solar programs, the New York City Solar Partnership works with city agencies to help modernize and address inefficiencies in the permitting process to accommodate solar, a technology that wasn't until relatively recently unfamiliar to the Department of Buildings and the Fire Department. For instance, when CUNY Solar Ombudsmen works at DOB's Development Hub, which processes online permit applications one day each week to monitor how well the permitting process is keeping pace with the volume of incoming solar permit applications. We are pleased to report that both DOB

and FDNY have made significant strides that make the permitting process more responsive to the solar community, and that ultimately increase solar potential in the City. At this time last year, the average turnaround time for solar outpatients at DOB was between six and eight weeks. Since then, DOB has made a project advocate available to the Development Hub, and requested that she focus on solar applications in order to address their concerns with clear and consistent guidance. Then, effective at the start of this year, DOB made an expedited permit process called Professional Certification available to applicants seeking property tax abatement for small residential installations. This change allows the large quantity of small projects to avoid plan reviews, and has resulted in the elimination of DOB's review backlog. This change allows the large quantity of small projects to avoid plan reviews, and has resulted in the elimination of DOB's review backlog. Now, rather than the uncertainty of waiting six to eight weeks, a solar applicant can expect a decision rendered in just 1.3 days after submission, an average--on average. DOB is to be commended for an improvement of this magnitude in such a short amount

of time. FDNY has also been a responsive collaborative for the solar partnership. In March, FDNY released a guideline reducing the--the roof slope that differentiates flat and pitched roofs from 20 degrees to 9-1/2 degrees. Because the Fire Code allows rooftop equipment including solar panels to cover a greater share of rooftop surface on a pitched roof than on a flat roof, this change has effectively increased solar potential for roughly 5,000 buildings in New York City with roof slopes between 9-1/2 and 20 degrees. In some cases, this extra capacity can be enough to make a project's economic--economics viable. Additional changes to facilitate solar adoption are in development. DOB has proposed changes in--to the Energy Conservation Code including mandates for one and two-family homes to built solar ready. DOB is also in the early stages of rolling out a new risk based permit application system, which assigns projects 1 of 52 risk profiles. The riskier the project the more rigorous the application. Solar energy projects will receive a dedicated risk category, which is expected to fall on the lower end of that risk spectrum. This will further streamline the solar permitting process by eliminating forms and

questions that do not apply to solar installations.

In conclusion, I'd like to reiterate that the combination of top-down targets for solar deployment, strategic partnership among city entities, and market maturation has supported a burgeoning solar industry to driver greater adoption in recent years. With the amount of solar capacity installed now three times the 2014 level, we have already made substantial progress towards One City solar targets. However, maintaining our current pace will require the city to continue expanding access to solar energy for more and more residents by working to further reduce costs, and proactively dedicating outreach and resources where they are most needed. The City will also need to remain vigilant to assure a sound business environment for solar in order to keep pace with the kind of market needed to achieve 80 by 50. This Administration and the New York City Solar Partnership will continue to provide an interface between New Yorkers, city agencies and the solar industry and electric utilities to identify and address frictions that arise as technologies evolve. We look forward to working with the community on environmental protection to ensure that we are doing

everything we can as a city to support the solar industry. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you for your good testimony. [coughs] I just have a few questions before I turn it over to my colleagues. Can you walk me through very quickly the steps that a solar installer must go through in order to complete an average solar project? [pause] And then what paperwork and applications are associated with each of these steps, and does the City charge fees in connection with them?

ANTHONY FIORE: Sure. I--I--I think to best answer that I'd like to bring the representative from the Department of Buildings.

CHAIRPERSON CONSTANTINIDES: Great. Fantastic. [pause]

GINA BOCRA: Okay. I am the Chief Sustainability Officer at the Department of Buildings.

CHAIRPERSON CONSTANTINIDES: This is great. So, do you want me to--I'll repeat the question if--if that's okay. So if you can list for me the steps that an average solar installer would have to go through to get a project done, and--and

please if you can include what paperwork, applications are associated with each of these steps and what fees do we charge in association with them?

GINA BOCRA: I'll do my best to answer all of those details.

CHAIRPERSON CONSTANTINIDES: Okay.

GINA BOCRA: An applicant should start first with a registered design professional, and work with their installer to identify what obstacles they actually have to overcome on their own site. Determine then which type of process they'd like to-- to go through with their application at the Department of Buildings. There are several options that provide a lot of flexibility. They may most often choose to follow an Alteration Type 2 application process in which they would submit to the department the plans that show the details of their-- their project, and they would provide that material to the department under the application of a--a registered design professional. A--a resident may not go through that process. [coughing] Once they submit an application, it goes through one of the review options. Some of them may have a turnaround of less than a day or two. Some could go through a

process where they are fully reviewed by a plan examiner.

CHAIRPERSON CONSTANTINIDES: And what are--what are the criteria to sort of have it one or the other?

GINA BOCRA: The criteria depends on the amount of liability that the applicant chooses to take on. They may self-certify the process meaning they take full liability that all of the code requirements have been met, or they may go through a full review at the opposite end in which case an examiner would review for all of the requirements of the code. So they must meet the Building Code, the Electrical Code, the Fire Code. All of those requirements are very important. They would document all of this. They would get a review and if they are approved, would then be able to apply for a permit with their installer. The installer would make that application. They can get that permit in a day, and would be able to start the process. There are other criteria that might come into place. So if they don't meet the Fire Code, they may need to go to FDNY for a variance based on the conditions of their property.

2 CHAIRPERSON CONSTANTINIDES: Uh-huh.

3 GINA BOCRA: If it's a very large
4 project, they may have to go to the Electrical
5 Advisory Board, and get reviewed there for large
6 installations, and then there's also the coordination
7 with the utility.

8 CHAIRPERSON CONSTANTINIDES: [coughs]
9 Okay, and how smooth in your opinion is that--that--
10 that communication with the utility. How is--how is
11 that going? What could we do better that?

12 GINA BOCRA: I'm unable to comment on how
13 smooth that process goes with each other. [laughs]
14 I'm--I'm not as familiar with that side of the
15 process.

16 CHAIRPERSON CONSTANTINIDES: Okay.

17 GINA BOCRA: I apologize.

18 CHAIRPERSON CONSTANTINIDES: Okay, and as
19 far as fees that we charge?

20 GINA BOCRA: there is a fee for the
21 application, which is based also on the size of the
22 project.

23 CHAIRPERSON CONSTANTINIDES: Uh-huh.
24
25

2 GINA BOCRA: It varies based on the
3 scope, and permit fees also were based--be variable
4 based on the size of the project.

5 CHAIRPERSON CONSTANTINIDES: Now are
6 these fees any different than we would charge for
7 someone that's installing a boiler? Is this less,
8 more. I mean are these comparable fees that we're
9 charging or is it more or less expensive to--how--how
10 would you categorize these fees?

11 GINA BOCRA: I would categorize it as--as
12 comparable.

13 CHAIRPERSON CONSTANTINIDES: As
14 comparable. Okay.

15 ANTHONY FIORE: I think that Chairman we
16 can jump in on the relationship with the--with the
17 utilities.

18 CHAIRPERSON CONSTANTINIDES: Okay.

19 ANTHONY FIORE: So each utility is
20 responsible for maintaining an interconnect queue.
21 So a running list of applications it received to
22 connect solar photovoltaic systems. Our
23 understanding is that the wait list in Con Ed service
24 territory is far less than in other New York State
25 utility service territories. That--I think that's a

combination of a certain amount of responsiveness from Con Edison, and also lower levels of penetration in New York City than elsewhere in the state where there's a lot more open land. We are cognizant, though, of the potential for the increasing levels of solar adoption that we wish to encourage to create frictions in the interconnection process and to potentially develop delays. So our office and the city in its regulatory capacity is engaged with the State Regulator, the Public Service Commission as well as Con Edison on a--a regular basis to ensure that the standardized interconnection requirements are conducive to a swifter more timely, more transparent practices for solar installations of all sizes. And furthermore that we can establish hopefully through regulatory reforms a more transparent and responsive time frame for solar interconnection--inter--interconnection requests at large for solar or other distributed resources to be transparent, well understood and time responsive.

CHAIRPERSON CONSTANTINIDES: My next question is, you know, I--I hear all of the, you know, moving forward how we've done well at DOB and I applaud for that, and I see we've reduced times. How

do we--how do we sort of codify that and make sure it's scalable. So as we are encouraging additional applications, and we're seeing the market even grow even further, how do we ensure that all of these changes that you've made are codified as we, you know, all of us will not be here forever as--as I, you know, there's this thing called term limits. So I won't be here and neither will the administration. But how do we make sure moving forward as we grow out to 2025 that these are all codified and that as we scale forward that these are all still things that we can do beyond just, you know, constantly identifying a problem. And then having to constantly--how we make DOE more nimble and adaptable as we move forward?

GINA BOGGER: We are working on a process that is a risk based plan [coughing] process, which will allow us to spend more of our resources on the highest risk projects, and as we move farther-- farther into that process and identify the most important aspects of a solar project on a risk based perspective, we will continue to focus resources on-- on those portions of an application. That will allow us to focus our time on the projects that need the

most attention from the department, and allow projects that are of lower risk to move faster through the process. That is a major part of the Commissioner's plan for the Department of Buildings in--in the coming years. We also have a--a process that through the Development Hub has allowed us to train a large number of the examiners.

CHAIRPERSON CONSTANTINIDES: Uh-huh.

GINA BOCRA: Instead of having a--a smaller dedicated team that allows us to remain more nimble when we see an influx of applications rather than trying to predict when we anticipate certain types of solar projects might be filed because it's--it's almost impossible to predict when those projects are going to come through the queue.

CHAIRPERSON CONSTANTINIDES: All right.

GINA BOCRA: So we are providing a large amount of flexibility in the staffing. We're the--the industry flexibility in how they would like to submit their applications, and we are working towards a process that reduces the requirements for low-risk projects so that they can move through the process quicker.

CHAIRPERSON CONSTANTINIDES: That's good to hear because I--I was a little concerned when I saw in your testimony that it said she, you know, it would--it would--it sort of made it sound like there was a singular person that was going to be at the Development Hub and it's great that, you know, individuals are there, but we need to make sure that there's a team of people that are reviewing these applications as we scale to get through the 100 megawatts and--and to the 250 in the private sector. We're really going to have to sort of build this out, somebody here that there's a commitment to have numerous teams of people working. Just very quickly on--on the variance with FDNY when it comes to that--that whole process, how would you do it? How could you sort of walk me through that variance process if--if at all possible?

ANTHONY FIORE: I--I think we'll call up a representative from FDNY to.

CHAIRPERSON CONSTANTINIDES:
[interposing] Uh-huh. Yeah, please. [pause]
[coughing]

WINNIE LEI: Hi. My name is Winnie Lei. I'm the Supervisor of the Rooftop Access Unit, and

for the variance process of the Fire Department you only have to file an application with the Fire Department only if you don't meet the requirements. The Rooftop Access portion of the Fire Code had the word variance. So we don't see very many solar applications comparatively to the Department of Buildings. We only see the ones that are non-compliant to the requirements of the clear--clearance spaces for the Fire Code and when you apply for a variance, you would have to fill out what you call as a TM-5, Rooftop Access Variance Application. That comes with a flat fee of \$420. You would have to submit that application with a 11x17 size plan, signed and sealed by our architects--

CLERK: [interposing] Are--are we able to submit those at all by--by electronically? Do you have to come in physically to submit? I mean how--how do we--how does that--how is that currently submitted?

WINNIE LEI: Currently, we don't have the system in place to--for applicants to be able to submit electronically. You would have to come into our headquarters at 9 Metro Tech Center in Brooklyn,

or you can alternatively mail it in, but obviously if you submit in person it would--it would be faster.

CHAIRPERSON CONSTANTINIDES: Uh-huh.

WINNIE LEI: So you would submit your application, your fee, your--your 11x17 size plan detailing what you're proposing to do, and what it is that you are non-compliant to the Fire Code and can--we still operate on the rooftop with the proposed installation.

CHAIRPERSON CONSTANTINIDES: And what's the turnaround time for the approved install variances for FDNY?

WINNIE LEI: It really varies because we don't set--we don't differentiate between roof--any type of rooftop application. So sometimes when we are aware that there is let's say a deadline we're trying to make for tax incentives, we will try to expedite these particular solar applications by our Fire Code. We will respond within 40 days. Sometimes with the--dependent on the amount of applications we have every month or at any current time we could respond--respond in as little as two to three weeks. but sometimes it will take maybe four to five weeks.

2 CHAIRPERSON CONSTANTINIDES: Is there a
3 way that we can, you know, have someone that's more
4 familiar with solar applications and involved and is
5 there something that we can sort, as again we're--
6 we're scaling forward and looking to really sort of
7 see this market go like this. How do we sort of take
8 that time down from several weeks to, you know, and
9 still be safe? I mean there's--there's--there's got
10 to be a way to do that?

11 WINNIE LEI: Can I let the Chief of
12 Technology answer this one?

13 CHAIRPERSON CONSTANTINIDES: Yeah, Chief,
14 please. [coughs]

15 CHIEF PIGOTT: Good afternoon. My name
16 is Tom Pigott. I'm the Chief of Technology Management
17 at the Bureau of Fire Prevention. The only way to
18 scale--remember that this is a small percentage of
19 the solar installs. This is not the majority of the
20 installations. These are installations that do not
21 meet the Fire Code. Our current infrastructure in--
22 in--in--in the Fire Department does not allow us to
23 take electronics submissions. We are currently
24 working with an outside vendor, and the projected
25 I've been told this morning is sometime around 2019

to--to take electronic submissions. We're in the process of working with that vendor and their plan. That was in the fourth step, fourth phase. So we're pushing to get that put into first phase because that's important that industry is able to either our applications and--and to submit applications online. That will cut down the time substantially.

CHAIRPERSON CONSTANTINIDES: Are you going to get that before 2019 or that's--?

CHIEF PIGOTT: Oh, we're--we're hoping that--we're hoping to get that done by 2017 that's what, you know, what our goal is because it is important to get that turn around. Antiquated? Absolutely. Infrastructure does not support the--the application of electronic submissions so that--that kind of puts in a paper mode and the applicant must come down to window number 8 to--to submit that to the Fire Department. There is an internal turnaround time by the time the plan examiner gets it. So we've--we've identified that as an issue, and we're trying to move forward to expedite that as quickly as possible.

CHAIRPERSON CONSTANTINIDES: I mean I think that by 2017 sounds better than 2019. [laughs]

CHIEF PIGOTT: Absolutely, absolutely.

Yeah, I hate to be the one sitting here throwing those numbers out, but yeah absolutely, '19 to '17 is--is certainly, would benefit us.

CHAIRPERSON CONSTANTINIDES: And when it comes to-to, you know, precertification of flat roof buildings, I know that there's been a distinction between, you know, a pitched roof and flat roofs and that helped, really the pro certi--you know, the pro certification. What about extending that to flat roofs? Is that a possibility in the future? How do we move that forward?

CHIEF PIGOTT: We're basically working on a frequently asked question, and--and the frequently asked questions eventually get put into code, right. So the--the 20% reduction to 9.5 allows more for homeowners, residential one or two-family homes to do actually do business in New York City. I think that's why you see a--a big push in Queens and Staten Island, right, the up--uptick on that. The floor roofs we are currently working on small buildings 25 foot wide buildings, and the reasoning behind it is on flat roof buildings it's--in Fire Department operations it's critical that we ventilate that roof.

Peak roofs not--not so much. Our primary access is the bedrooms actually because most of the peak roofs are residential. So we focus on the sleeping quarters. In flat roofs it's really critical that operationally the Fire Department has been aggressive interior FDNY. So we enter the building to--to fight these fires. By ventilating the roof on a flat roof we prevent horizontal or mushrooming of heated gases and smoke. So it's really critical that we--we--we do that. So with an access to roof obviously a lot of the borough frame brownstones are attached. So in order to get a good view of the rear, we need to get on that roof and get to the front, to the back so that the--that--that individual firefighter can relay information back to the chief officer. So to circle back, we're working on something to--on 20 foot--20 foot wide buildings such as brownstone row frames to reduce the clear path, access path from front to rear by not more than two feet. So what--what that means is the solar panels cannot do that, but building features and structures can. So you design your installation in mind looking at the building features that are there to looking at bulkheads, looking at skylights, looking at vent pipes and so forth and so

on. You'd be allowed to encroach upon that six foot access path with those building features that are buildings features. You can't move the, you can't change them. So we would allow you to reduce in--in areas to four feet. So we've--we've identified that there is a problem for smaller buildings. We're trying to get a happy, you know, in the middle type where we still operate on that roof effectively to maintain the safety of the people not only that-- that--that live in--inside the building, but also the firefighters that are responding there. And yet allow solar to kind of get that break even point where we may be able to get a few more panels on the roof that makes it cost-effective to--to make this project move forward.

CHAIRPERSON CONSTANTINIDES: I mean I represent a district in Queens, a lot of, you know, one, two-family homes that are interested in solar, and that's one of the concerns that consistently comes up. So I think there's--there's, as you mentioned, there's a way that we can find a happy medium between keeping us safe, which no one wants to encroach upon. That's, of course, our number goal--

CHIEF PIGOTT: [interposing] Sure.

CHAIRPERSON CONSTANTINIDES: --is always to make sure that the fire--FDNY that one we're not putting anyone's lives in danger, not the firefighters nor the--the residents. But secondly, finding a way to move away from fossil fuels. So we share that goal. So thank you for that.

CHIEF PIGOTT: Okay.

CHAIRPERSON CONSTANTINIDES: I think at this point I will--I'll turn it over to my-- Does Laurie have any questions? No, all right, and Donovan stepped out. So I'll ask my last question and the I guess I'll let the--this panel go. [coughs] And I--I've heard a lot about, you know, PACE Financing. You know Property Assessed Clean Energy, an innovative way of financing renewable energy projects. Can you tell me a little bit about PACE financing and, you know, why hasn't it yet been utilized here in New York City, and what's standing in the way of doing so?

BEN MANDEL: Sure, I'd--I'd be happy to. So PACE Financing, as you point out, it's Property Assessed Clean Energy financing, and it's been a favored solution in a lot of parts of the country having been popularized within the past decade

really, and it's even been taken up, as--as I'm sure you're aware, in other parts of New York State. To--to our understanding, part of the difficulty with implementing PACE in New York City is our--our conventions of securitizing assets in default, which complicates the--the debt structure. I--I think our office is actually in--in the process of assessing a number of financing tools that--that we could leveraging for particular segments, one segment being solar energy in a small commercial space, which we observe is very under-served in terms of financing options. We would welcome the opportunity in the course of that research assessment to--to work with this committee and--and your staff to make sure we have all available knowledge at our--at our disposal and--and can really assess what alternatives might exist so that we can perhaps work within the conventions of--of the way New York City's financing and tax structure work to permit a solution such as PACE or--or some similar form of financing to extend the options available, particularly in the small commercial space.

CHAIRPERSON CONSTANTINIDES: All right, actually I lied. I do have one more question.

[laughs] You know, do we have regular meetings with the local solar industry to elicit feedback and cooperation. You know, what has been done since-- since July with this type of--this type of relationship where we have stakeholder meetings and have a real dialogue between DOB, FDNY, other city agencies involved in any other--of course, the Mayor's Office of Sustainability to kind of manage it all. How do we--are we having those conversations. Can we--what's going on with that.

BEN MANDEL: All right, so I'll--I'll kick it off and then I'll invite Tria Case to--to follow up and flesh out some of the details. We do have regular meetings and working groups with solar industry partners. Those regularly convened by sustainable CUNY, and the New York City Solar Partnership. We're active participants in that. In addition, we have working groups on--on permitting interconnections so we can try to identify frictions that may arise, and make sure that we're working in partnership with industry and city agencies to--to develop solutions. But I'll--I'll allow Tria to expand on that.

TRIA CASE: Sure. As Ben said, they're-- we've actually--we have working groups that are made up of the key permitting and--and utility entities in the city. So in sort of going back to your original question in terms of how do make sure we stay on top of frictions before they may get too big, we meet on a monthly basis, and talk about what's happening in the marketplace and think about innovations that we call work on together. With regard to the industry, we initiated the Solar Installer Round Table, which has 300 members, and that group receives information out if there's a change in FDNY and DOB, but also industry also posts. So just recently there was a big discussion about the property tax abatement for example and how did the industry come together around that. So it serves as platform to share out information as a communication mechanism for the industry and vice versa. In addition, we hold workshops for the industry. Just--just recently at-Con--Con Edison hosted a workshop. Over 100 folks came and talked about resilient solar, which is something we haven't really talked about. We talked about how do you permit through the varying agencies, and I've actually now put the permitting process on

line. So you don't have to be here to find out exactly how to get through the process. If you're new to the city you can--you can get on the sustainable CUNY website and soon the New York Solar Map, and you can actually use an interactive permitting guide. So you can answer certain questions, and it will tell you which forms apply to you. So we're very excited. We'll be launching that, by the way, June 20th. So that's a--that's a big--

CHAIRPERSON CONSTANTINIDES:

[interposing] That's great.

TRIA CASE: --a big exciting new--new thing. So, yeah, lots of different mechanisms whether it's online, whether it's in person in workshops or whether it's a round table in terms of getting on it.

CHAIRPERSON CONSTANTINIDES: I think as--as frictions arise or, you know, the new challenges, new technology as--as we're moving forward and we are doing this, you know, scaling forward, we are going to need to be as nimble as we possibly can and be able to quickly adapt to prob--problems that--that come up, and I think that we have a good plan in

place that, you know, it sounds like we do, but we can sort of continue to move forward. We--we can't afford to lose time in running into, you know, bureaucratic, you know, sort of challenges. [laughs]

TRIA CASE: Yes. I think the--the framework is there. It's just using it as best we can.

CHAIRPERSON CONSTANTINIDES: And I think that's--and I think that I'm looking forward to working with you to ensure that, you know, these types of--of--of solutions are there on a regular basis that we can continuously, you know, loop DOB in, FDNY, local installers, you know, the utility, Con Edison others and--and making sure that residents when they're interested in Solar that it's easy. So I'll--I'll end this panel where I started. As--as I think we share this goal. We can make it as easy to go green as it is to be traditional. People utilize solar.

TRIA CASE: Absolutely.

CHAIRPERSON CONSTANTINIDES: All right. Seeing that my colleagues are not here, I've--I've used up my questions. So thank you for your time and I look forward to working with you all.

2 BEN MANDEL: Thank you.

3 ANTHONY FIORE: Thank you.

4 CHAIRPERSON CONSTANTINIDES: Next up we
5 have David Mack from Con Edison and Damian Sciano
6 also from Con Edison. If you can step forward and be
7 sworn in by our attorney Samara Swanston. [pause]
8 And again, if anyone is interested in testifying,
9 please fill out a card. If you're here, please make
10 sure you fill out that card if you are interested in
11 testifying. Thank you.

12 [background comments, pause]

13 LEGAL COUNSEL: Can you please raise your
14 right hands? Do you swear or affirm to tell the
15 truth, the whole truth and nothing but the truth
16 today?

17 PANEL MEMBERS: [off mic]

18 LEGAL COUNSEL: All right.

19 CHAIRPERSON CONSTANTINIDES: You may
20 begin.

21 DAMIAN SCIANO: Great. Good afternoon.
22 My name is Damian Sciano, and I'm the Director of
23 Distribution Planning for Con Edison. Thank you very
24 much for inviting me to speak about solar energy in
25 New York City. I'm happy to report that our city is

a vibrant marketplace for solar energy. Our consumers in New York City have completed more than 5,900 solar projects producing more than 75 megawatts of clean renewable power. To put that in perspective that's enough to power than 11,000 homes annually. Con Edison customers have made it clear that they want clean energy options, and the ability to manage their costs. One way we try to help them reach those is by encouraging them to consider solar energy, and making the application and installation process as easy as possible. Customers who install solar panels on their home or business can save significantly off their electricity bills. They also reduce power plant emissions, and can relieve congestion on our grids at times of peak demand helping us keep service reliable for our 3.4 million electric customers. Working with the city, the New York State Energy Research and Development Authority, the U.S. Department of Energy, the City University of New York and other partners, we have sought to show customers the economic and environmental benefits of photovoltaics. We want to help our customers complete their projects quickly and smoothly. That's why Con Edison has eliminated the engineering review

for installations producing less than 25 kilowatts.

We also contributed technical support for the creation of the New York City Solar Map, which is an online tool that shows the solar potential of many building sin the city. We also host the annual CUNY Solar Installer Workshop where we help to educate contractors and developers on the process of interconnecting solar in New York City, and we even have a page on our website explaining the installation process and the benefits of solar energy. And because we wanted to experience the installation process from the customer's perspective, a couple of years ago, we installed panels on our headquarter in Man--here in Manhattan. Our 200 high efficiency panels produce 40 kilowatts of clean energy. [coughs] Just last year, the Solar Electric Power Association, SEPA, recognized Con Ed for Smart Grid Innovation that led a customer in the Hunts Point Section of the Bronx install a 1.6 megawatt installation, which is the largest array in New York City. The engineering challenge was that the backflow of power from such a large installation could cause network switches to open impacting the reliability of the grid. We--we were able to adjust

the relays on the switches that were associated with the customer so that network switches do not open when power flows back into the grid from this customer, but those switches will still open if they detect any actual flaws. Since then, we have used that technology on an additional eight customer installations for large solar arrays. The development of solar energy across New York State took a big step forward this spring when Con Edison along with five other utilities and three solar companies formed the Solar Progress Partnership. In New York the utilities and solar providers are working together to keep our state solar market vibrant and sustainable over the long term. The partnership is making a proposal to ensure the continued growth of solar energy while ensuring that adequate funding is available to maintain a reliable and resilient grid. The partnership's proposal would transition from the current model for solar metering to one that would fairly address customer cost sharing issues associated with solar's expansion. The efforts we and our partners have made in the past decade have produced results as the pace of adoption has continued to accelerate. As recently as the end

of 2010, we had only 8.5 megawatts of solar energy on our system in New York City and Westchester County. In 2015 alone our customers installed nearly 34 megawatts of production, and we're on pace for an even--even more growth this year. Solar energy is a valuable resource in keeping New York City a clean and sustainable place to live and work, and I appreciate your time and will be glad to answer any questions you may have, and I guess I should also introduce David Gmach.

DAVID GMACH: [off mic] I'm Director of New York City Public Affairs for Con Edison.

CHAIRPERSON CONSTANTINIDES: Thank you both for being here. So I have a few questions. I mean I--you've--you've heard, you seen the Mayor's One NYC plan. We are looking--we have set the goal of 100 megawatts in city-owned buildings by 2025, and--and encouraging, you know, 250 megawatts of solar energy in the private sector. So that 350 megawatts how do we, you know, what steps can we take to facilitate that growth, and what coordination would--would Con Edison like to see from city government to make those goals happen?

DAMIAN SCIANO: Right, I--I mean I think the continued collaboration of all the different groups here, you--you basically heard that streamlining the process is clearly going to help this. We're certainly doing our best for the electrical interconnection piece to make that as straightforward and as understandable for everybody to participate in. The other thing that's going to help spur that is just simply the costs keep coming down for the solar panels and for the installations. The technology is getting better and there's more operational benefits to--to customers. So the combination of those two should really help us get to that goal.

CHAIRPERSON CONSTANTINIDES: And I think that they, you know, this coordination is going to be extremely important. You know, as we move forward, you know, with Con Edison with our utilities, we have to ensure that we-- How--how nimble can we be with Con Ed? I mean we've talked about, you know, FDNY and DOB being able to sort of look at their processes and streamline. What do you think we have the greatest opportunity to streamline here to ensure that, you know, we can--as we scale out that how do

we identify problems? How can we make sure that, you know, we don't get stuck in a sort of--a bureaucratic snafu.

DAMIAN SCIANO: Right. Yeah, absolute. I think there are several ways we can do that. You know, first and foremost Con Ed was a leader in the state and as far as I know in the country in establishing the position of the DG Ombudsman. I was actually the first ombudsman back around 2007 that was put in place so that there would be a human being there if anyone is having trouble interconnecting that they could reach out to--and that's identified on our web page--to kind of make the process better. Just recently the state actually adopted that model for all the investor-owned utilities as well as NYSERDA themselves and the Public Service Commission. So part of it is just having that interface to the customers, participating with CUNY, talking to all the different groups and understanding the issues. The second piece is obviously the process, and you--you certainly a lot of good questions about that. So, we do have our registration process electronically. In fact, we've just through an upgraded on our Customer Project Management software

to kind of tailor it even better to the--the solar installations that we're see. Because that's driving really the volume of people that want to interconnect to the grid is the smaller solar installations. Literally thousands a year. So we--we're automating the heck out of that to--to make that very quick. I had the lady from the--the DOB used the term self-register. As we become more familiar on the smaller projects, which is--which is the vast majority of the projects people are connecting, and we know the vendors and the developers that we're working with, we will allow them to self-register in a similar way so that they can assert to us that they have installed it and it's been done completely. And we take, you know, a big Con Ed check out of the process there at, you know, in a way that we think is acceptable and still maintains the safety and the reliability of the system. So doing everything we can to kind of squeeze that--

CHAIRPERSON CONSTANTINIDES: And Con Edison, of course, is part of the working group that is through--through CUNY with DOB and FDNY and with the--the solar installs, you'll be consistently in that room when concerns come up, correct?

2 DAMIAN SCIANO: That is correct, yes.
3 We've--we've tried to be a leader in that, and--and
4 participate and--and benefit from all the great
5 people at CUNY that--that organize these and get the
6 right stakeholders together. We've--we've sponsored
7 some of the events, as you've heard, and, you know,
8 even of the ANSI Standards and some of these more
9 esoteric proceedings about what the interconnection
10 proceedings are, you know, we're there, the solar
11 developers are there. There's much more dialogue
12 than there was five or six years ago when it was just
13 really kind of a new technology for everybody. So
14 that--that--that is making great progress.

15 CHAIRPERSON CONSTANTINIDES: That is
16 going to continue?

17 DAMIAN SCIANO: Yes, absolutely, of
18 course, yes.

19 CHAIRPERSON CONSTANTINIDES: And--and
20 explain to me how a customer--a customer's rate or
21 bill is impacted when they install a solar system on
22 their property.

23 DAMIAN SCIANO: Right. So--so the benefit
24 of the solar installation is that you put it on your
25 rooftop [coughs] you know, into the--your-your goal

is kind of when the sun is shining to take advantage of it because it is an intermittent resource. So you want to generate as much as power as you can when the sun is out and the sun is strong. And then at night, on cloudy days, hazy days, you take the power and then you use that. To the extent that you work with the developer and you size it to the right size for your particular installation and your particular usage, you could literally get your bill down to just the cost of writing the bill and that usage charge through--through the current metering set up.

CHAIRPERSON CONSTANTINIDES: Okay, and if you--can you explain how the rate paid back to customers using that metering is determined?

DAMIAN SCIANO: Sure. [coughs] The net metering is--is really it's a credit for the power that is generated during the sun, and actually exported to the grid. In other words, the customer can't use it all when that sun is out at its highest.

CHAIRPERSON CONSTANTINIDES: Right.

DAMIAN SCIANO: By definition he's got to send it out into the grid, and then that's credited against his or her usage when they're actually doing that.

2 CHAIRPERSON CONSTANTINIDES: And how--
3 how--

4 DAMIAN SCIANO: [interposing] So we use a
5 special meter. I'm sorry. So--so physically we put
6 in a brand new meter. Part of the process is when
7 they do selected to install solar we go out and we
8 put a net meter on them, which--which allows the
9 electricity flow to be measured in both directions,
10 well, actually to--to be netted out in both
11 directions. So if they're able to produce a 100
12 kilowatts when the sun is shining and then they use
13 100 kilowatts throughout the rest of the day, they
14 would essentially pay nothing.

15 CHAIRPERSON CONSTANTINIDES: So it's the
16 same rate? So basically it's not going to cost them
17 more or less to have this net metering device or--?

18 DAMIAN SCIANO: Right that is correct.

19 CHAIRPERSON CONSTANTINIDES: Okay, that's
20 been a concern that I've heard from a few residents
21 that they were getting less. Solar and developers
22 are reporting on their solar projects, and they're
23 having to bear the full costs of upgrading
24 transformers. Is this--and--and it's an impediment
25 to them that they've expressed. Does Con Edison have

any thoughts on how we can make that cost less burdensome? Does Con Edison see any advantages to sharing the cost of upgrading transformers or what are your thoughts there?

DAMIAN SCIANO: Well, just for the context was that made in a generic space or in a New York City context because my--in general we don't have that issue in New York City. Our load is so robust and--and there's so much usage that in general that's not the case. What we do typically have to do is modernize the relays for the network protects. Because in some instances, and there's really only been, you know, less than a dozen, the power will flow backwards, and it opens network protectors that really shouldn't be open during normal operations. So we're able to modernize those relays for a relatively low cost, and we do add that to the cost of the project because that is explicitly caused by that project. But these are typically very large customers. These are not small rooftop residential. These are 100, 200, 300 kilowatt installations, and it's a--it's a very small cost of the total bill. But it is--it is the reason they're opening is because of the installation.

CHAIRPERSON CONSTANTINIDES: Right, well, yeah, if--if we want to encourage people to--to take those steps, right? We know when the status quo is--is a challenge, right? We can't continue to--on the path that we're currently on. We have to find these. You know we have to use solar, right. We have to move to solar and wind. So how do find a way to collaborate to make sure that as more of these projects go online that--we want to encourage large solar projects. How do we sort of keep that cost down?

[background comments]

DAMIAN SCIANO: I--I--we--we definitely want to keep those costs down. We--we also want to be fair to all the other customers on the system that would otherwise pick up that cost. So, you know, for example of the 1.6 megawatt facility, this is a very large facility. This is, you know, million dollar--millions of dollars. We're able to adjust the relays on the network protector at a--at a very low cost, and you know, in the thousands of dollars range. And so it doesn't really add a burden to the process. You know, I think what we're experiencing is you--we're kind of benefitting from the maturing

technology of the solar--solar and photovoltaics, and to keep that going, you know, we want to make sure that we're appropriately accounting for it. We don't want to unduly burden a project.

CHAIRPERSON CONSTANTINIDES: Right.

DAMIAN SCIANO: I agree with you, when all things being equal, you know, we'd--we'd rather not add any costs. But in situations where it is explicitly as a result of that, we'll do our best to--to keep that cost as low as possible and--and still meet the need, and I think that we've done that. We were actually recognized with an award from SEPA for--for having done that.

CHAIRPERSON CONSTANTINIDES: I appreciate that. I mean, look, I think again as--as we scale forward and as we are, you know, moving towards a greener future I think we're definitely looking forward to coordinating with you, and I hope that after you finish testifying today that someone from Con Edison as--as the City, DOB is still here and--and they've left representatives behind. I hope that someone from Con Edison will be here to hear concerns that might be brought up by industry representatives and others today. So we can make sure that that--

we're sort of responding to those concerns in real time. That after this hearing that we can get moving on those concerns.

DAMIAN SCIANO: Right, and just can I say from--from the--I was just remind that the procedural point of view, too, that--that New York State has the standard interconnection requirement that kind of talks about all of these things. And it does specific that the cost of the interconnection be paid by the customer that required the upgrade. So it's also a--a procedural requirement of us.

CHAIRPERSON CONSTANTINIDES: Uh-huh. All right. Rory, do you have any questions, sir? No? All right, with that I'll--I'll let this panel go, and I will call up the next panel. [background comments, pause] All right. So, the next panel will be Ben Arana from Local Union No. 3, IBEW; Michael Yee also from Local 3 IBEW, and electricity--electrical industry. We'll have Ruth--

LEGAL COUNSEL: Hollinger.

CHAIRPERSON CONSTANTINIDES: Hollinger and Samantha Wilts from the National Resources Defense Council. If you can all come forward and be recognized and be sworn in by our attorney.

2 [background noise, pause]

3 LEGAL COUNSEL: Can you please raise your
4 right hands. Do you swear or affirm to tell the
5 truth, the whole truth and nothing but the truth
6 today?

7 PANEL MEMBERS: (in unison) I do.

8 [background comments, pause]

9 MICHAEL YEE: Good afternoon. Thank you
10 Council Committee Chair Constantinides and members
11 Levin, Lancman, Richards and Ulrich for holding this
12 important hearing on New York City's sustainable
13 future. My name is Michael Yee, and I am the
14 Treasurer of Local Union No. 3, International
15 Brotherhood of Electrical Workers, and Director of
16 the Educational and Cultural Trust Fund of the
17 Electrical Industry. I am providing this testimony
18 as a representative of Chris Erikson, Business
19 Manager of Local Union No. 3 IBEW, and Steven
20 Gianotti, President, New York Chapter of National
21 Electrical Contractors Association. Local 3
22 represents over 28,000 members engaged in various
23 occupations within the electrical industry in New
24 York City. The Education Fund is responsible for
25 their continuing education, and NYCA New York

represents almost 300 electrical contractors in New York City. This hearing is particularly relevant to our industry because of the city's goal to install 100 megawatts of solar on municipal buildings. To fully power municipal operations with renewable energy by 2050. Industry's electrical contractors and their Local 3 membership have already installed sizable photovoltaic systems in New York City at the Stillwell Avenue Subway Station, the Museum of Jewish Heritage, the Solar at Battery City, and most recently P.S. 63 the Net Zero and the pre-school (sic) in Staten Island. These projects are only a small snapshot of the renewable and energy efficiency projects that our industry has been able to perform. the success of such projects is due in no small part to the--to the expertise of our industry's contractors, and the Local 3 members. Since 2007, the Collaboration with Sustainable CUNY has contributed to the competency of our industry to manage the complexities involved with photovoltaic installations. The exchange of knowledge between sustainable CUNY and our industry and other partners has allowed for improved efficiencies design, permitting and construction, and has resulted in

sustainable CUNY being one of the most valuable resources for photovoltaic projects in New York City. Since 2008, Local 3 and our industry employers have installed several photo--photovoltaic systems in our buildings, and to date over 100 megawatts have been installed. The combined power produced by these systems has exceeded 600,000 kilowatt hours. This has kept over 1.6 million pounds of CO² emissions out of our atmosphere, and we have another 35 kilowatt PV systems slated to be installed in the next few months in our new training center in Long Island City. The Local 3 membership has been encouraged to install PV systems on their own homes and since 2008, several hundred members have take up that challenge, and completed installations on their homes. At an average size of six kilowatts, the combined size of these systems is over 2 megawatts of green energy, eliminating millions of pounds of CO² emissions. But Reducing emissions isn't the only important part of making our system--city more resilient. We must also create and preserve good jobs for New Yorkers. The project I mentioned not only reduced the city's carbon footprint, they demonstrated that they were successfully completed with a highly skilled well

paid workforce and an affordable price point for the developers. Good jobs are a vital element for sustaining a healthy middle class within the city. When workers are paid well, they add to the overall economic growth of New York City. Sadly, this is not what the City is doing in its next round of solar installations. The RFP for installing 100 megawatts of solar on 88 municipal buildings via power purchase agreement has recently been issued, and it does not-- it does nothing to ensure that we create good jobs that make New York's communities more resilient. There are no wage standards, no project labor agreement, no local hire provisions, no training standards through union apprentice programs [bell] and no plans to integrating--

CHAIRPERSON CONSTANTINIDES: Your reference, you can continue with that. Go ahead.

MICHAEL YEE: Students in--no plans for integrating students in vocational programs into the installation and maintenance of solar systems. I believe that the magnitude of the task at hand gives the City Council an opportunity to provide job growth for the citizens of New York. The Council Members should compel those producers and suppliers of

components for these projects to step up--set up manufacturing facilities within the depressed areas of the city, and provide much needed work or opportunity to the residents of those communities. Given the clear benefits for--of our communities can derive from good jobs, paid on-the-job training programs and local hire provisions. It is baffling that the City did not include those in the RFP. We want to work with the City Council to make sure that we create good jobs, protect workers with these public investments, and recognize the need to keep the cost affordable for these projects in Local 3 and our industry contractors want to be a partner to that success. Workers on these projects should not be locked into low wage jobs without any avenue for upward mobility. Local 3 and our industry have a long history of helping workers achieve good careers and would welcome the opportunity to provide input for the revised of this RFP. This RFP has the potential to be utilized as the standard for our future renewable work in the city. We must get this right and ensure that while we are protecting our climate, we must also be protecting our people. As a partner for sustainable CUNY, our industry is urging

the members of the New York City Council to continue their support of sustainable CUNY and their mission to foster of photo--photovoltaic installations, and provide the technical knowledge base necessary to achieve the city's goal of a sustainable landscape for the citizens of New York City. Thank you for your time and consideration allowing me to express these comments on this matter.

CHAIRPERSON CONSTANTINIDES: Thank you.
I'll ask questions at the end.

[background noise, pause]

BENJAMIN ARANA: [coughs] Thank you, Council Committee Chair Constantinides and members Levin, Lancman, Richards and Ulrich for holding this hearing on New York City's Sustainability future. My name is Benjamin Arana, and I'm a Business Representative for Local Union No. 3 IBEW, and I'm responsible for the Solar Program in Local 3 IBEW. I'm here in support of Mike Yee's testimony, and also state that we have over 2,500 apprentices trained in solar installations, which is part of our apprenticeship training program. In addition, we have over 1,000 A journeymen trained in solar installations. Local 3 has always stayed on pulse

with electrical technology, and have provided the education and training to supply the industry with the best electricians in the market. We are willing and ready for the future solar work that is coming to New York City. I recently came across a list of solar jobs that were part of the first 24 schools that had solar installed and the installations were performed by Solar Liberty, Standard Solar and Tangent, which they did not use any of our Local 3 contractors. I couldn't understand why we were left out of the first phase of solar installations, but I'm hoping that we are included in the future solar installations. I would like to ask if the agency project labor agreements can be used for the future solar installations regardless of public-private partnerships. PLA's have language for local hire, and minority participation in there in place. I would also like to add one other thing that came to mind when I was listening to some of the reports that when-- And this is for the Department of Buildings, a question. I would like to see the names of the electrical contractors posted on the pages when the PE files for the drawings or for the submittals of the solar PV image installs. They don't include the

presently on the filings. I located those 24 jobs and at least eight of them had no electrical contractor listed on this filing. (sic) So it's something that we'll--we'll do our research. It's hard to identify, but I want to thank you for time and consideration following and allowing me to express these comments on this matter. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you.
Thank you.

[background comments]

SAMANTHA WILSON: Good afternoon,
Chairman and Council Members. My name is Samantha Wilson. I'm an Energy Policy Analyst at the Natural Resources Defense Council. Thank you for the opportunity to testify on this important issue. As One NYC highlights, clean distributed generation for our solar PV will be essential for meeting the nine million metric ton reduction in CO² necessary to reach New York City's 80 by 50 greenhouse gas reduction target. Increasing deployment of solar PV also creates the local jobs, provides enhance grid reliability, and can bring significant public health benefits when displacing dirty, old and inefficient fossil fuel electricity generation. The city is and

can do a great deal more to facilitate greater adoption of Solar PV and thank you for having this hearing today. My testimony highlights a few specific recommendations to help the city achieve it's citywide municipal solar goals while also increasing access to solar energy for all New Yorkers. First, as we've heard about a lot from the Chairman's comments and from the Administration, we need to continue to address existing code and regulatory barriers to expanding solar PV. There's been great--great and real progress on efforts to reduce the delays that lead to higher balance of system costs in the city. To continue to accelerate uptake of solar to the levels necessary. To meet our greenhouse gas reduction goals we need sustained capacity and support to meet these challenges, and we certainly have great detail from that. Secondly, the city should focus on increasing access to solar and developing equitable solutions for low-income customers. All New Yorkers should be able to enjoy the benefits of solar energy including reduced energy costs. Low-income residents spend a disproportionate share of their income on energy. Being able to install solar or participate in a solar energy

project would free up income for people's other critical expenses. To that end, the City through HPD and other relevant agencies should explore ways to facilitate the deployment of solar and affordable multi-family housing. Similar to EDC's Thermal Pilot project, the city could also conduct a pilot that would assist in understanding the benefits of installing solar PV and Solar on these buildings such as benefits to tenants for lower utility costs, benefits to landlords for improvement of payments as a result of lower--lower utility costs, et cetera. The City should also cut to--sorry--the City should also continue to explore possibilities for promoting shared solar in New York City through their own property as well as on private facilities throughout the city. Building off the information through the request for information on the subject issued earlier this year like sun for all. Shared solar is an important tool to allow energy customers like renters who would otherwise face barriers to the adoption of solar to enroll in renewable projects off site and receive credit on their utility bills to reflect that clean energy generation. Third, the City should build upon its exciting new Solarize NYC program,

which will make it significantly easier and cheaper for New Yorkers to go forward through aggregated purchases. One way it can do this is by developing solar aggregation initiative for New York City employees. The city should explore creating a sun share solar program for all city employees, expanding on the project recently underway for CUNY employees, which educates them about solar opportunities and offers reduced costs for solar installation through aggregated purchasing. By offering such a program, the city could created significant demand for PV while working on partnerships with one or more solar companies. The City could also use this opportunity to promote electric vehicles. Encouraging employees' interest in their solar PV to switch to an electric vehicle and size their PV system to enable charging. Finally, the City should focus on opportunities for supporting resilient solar and battery storage, which is a key component of the cleaner and more resilient grid. Through the current efforts of sustainable CUNY Resilient Distributed Generation Hub and IME, the City should focus in particular on neighborhoods and facilities that have high concentrations of vulnerable New Yorkers as well as affordable multi-

family housing. Thank you for the opportunity to testify today. We look forward to continuing to work with the Administration and the City Council to help keep New York City's solar and greenhouse gas reduction goals [bell] and help all New Yorkers have access to this clean and renewable energy source. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you.
Next.

RUTH HARDINGER: Okay, thank you.
[laughs] Thank you all for the Council's Environmental Protection Committee to have this Solar Energy Hearing. It's very exciting. Thank you.
First of all, there are a lot of benefits from solar energy, and by the way, my name is Ruth Hardinger, and I'm working a non-profit organization, Damascus Citizens for Sustainability. Solar energy is not just a sustain--is--is not only sustainable, it's renewable, and this means that we will never run out of it, and it's about as natural a source of power that is possibly--possible to generate electricity.
The creating of solar energy requires little maintenance. Solar energy is not only sustainable, it's renewable and this means that we will never run

out it. It is about as natural a source of power as it is to generate electricity. The creation of solar energy requires low maintenance. Once the solar panels have been installed and are working at maximum efficiency, there is only a small amount of maintenance required each year to ensure that they are in working order. They are silent producers of energy. It's absolutely no noise made from photovoltaic panels as they convert sunlight into usable electricity. There are continual advantages of solar panel technology, which are increasing the efficiency and lowering the cost of production. Thus, making it even more than cost-effective. During operation, solar energy power plants produce zero emissions. I went to talk about a month ago, and somebody from 350.org said that we are actually over the tipping point for climate change. There are members in the scientific community that are concerned that climate change cannot be reversed. We have to really slow down and stop fossil fuel use now. Bryce Payne, PhD has written about the need to reduce the emissions of methane because it has become a very potent greenhouse gas, as it is per IPCC 86 times stronger than carbon dioxide in the 20-year

time frame. Natural gas is comprised of 95% or more of methane. Methane degrades in 8 to 12 years once in the atmosphere, and during--and during that time it then degrades to carbon dioxide. During those 8 to 12 years, it's 104 times stronger than carbon dioxide. It's urgent that we get off fossil fuel and natural gas a significant contributor. Damascus Citizens for Sustainability did an emissions report about methane leaking in New York City gas pipeline across 160 miles in Manhattan, and at least 6.6% of the gas is leaking. Only five cities in the United States have actually measured methane with a device strong enough to register the fugitive emissions: A cavity ring bound spectrom--excuse me, it's hard to pronounce--spectrometry--spectrometry--spectro--spectroscopy. Anyway, you got the idea. Among the larger emissions, this can make a much larger report, but for today my reason to bring this up is to support getting natural gas and all other fuels and urgently get onto solar and other renewal energies. This is about life. I made a list of climate change impacts this year. Hottest days on the globe are now in 2016. [bell] The largest swaths--large swaths of the Pacific Ocean may actually sophisticate [coughs]

suffocate in the--in just 15 years since-- I mean basically that means is the Pacific Ocean is about to get--lose its oxygen. Since oxygen concentration in the ocean naturally varies dependently on variations of wind and temperature at the surface, it's been challenging to attribute any de--deoxygenation of the climate change. That's an article through Huffington Post.

CHAIRPERSON CONSTANTINIDES: If you can just sort of summarize, that would be helpful.

RUTH HARDINGER: Okay, yeah quickly. I mean there have been a lot of things happening. The--the Porter Ranch leakage, which continues now to leak; a Fort McMurray fire in Canada as a result of climate change. Cuomo's ideas about renewable energy are really important. I think the goal here is find a way to deal with climate change much more quickly. I know that there's a reason to try to do it by 2050, but I think it would be fantastic to get this moving much faster.

CHAIRPERSON CONSTANTINIDES: Thank you. Before I come back, I'm asking a lot of--an awful lot of questions today. So I'm going to--I'm going

to turn it over quickly to my colleague from Queens
Rory Lancman because I know he does have a question.

COUNCIL MEMBER LANCMAN: Thank you,
Costa. Good afternoon, everyone. So, my friends
from Local 3, which is headquartered in my district.
You know, reading testimony, and listening to you
about the lack labor standards, wage standards,
training standards in the expansion of--of solar at
least as it relates to--the city municipal buildings.
It really troubles me and alarms me, and evokes the
same kind of conversation that we're having in so
many other areas including an affordable housing
development and others where the City seems to only
measure success by the volume of units installed, the
volumes of--of units building [coughing] without
regard to quality, and without regard to the impact.
And missing an opportunity to provide good paying
jobs. But also in reality depressing the job market
by creating opportunities and expanding low-wage jobs
in many circumstances. Certainly in the affordable
housing arena of--of workplaces that are not safe
where people are getting paid off the books, et
cetera. Can you give us your direct experience with
the solar industry, and that part of it in particular

that is not union, that may not have the same kind of training safety standards, et cetera that we see at Local 3 and NYCA.

MIKE YEE: Thank you, Council Member.

I'll try and answer all of those for you. The Local 3 has--and the electrical industry has a long history, as I started in my remarks, as uplifting and provide a career path. It's just about entering at--at one level of pay, but also to provide that level of training to bring them up, and have upward mobility within their--their circumstances. We're also able to provide health benefits. What we do see out there and traditionally in a lot of non-union entities is that that's not happening, and the safety practices are--are ignored. I would say that Local 3 and our industry provides a high standards in regards to safety, in regards to healthcare benefits and wages. And we do want to make sure that the next generation of New Yorkers are given an opportunity to move up and be, you know, a contributing factor to the economic success of the city. A lot of these companies that come into New York City aren't from New York. They do bring in a workforce that aren't New Yorkers as well, and we want to make sure that

that's addressed, and make sure that New Yorkers are benefitted from the investment that city dollars are putting into solar.

COUNCIL MEMBER LANCMAN: Do you have anything to add from the--from your perspective?

BENJAMIN ARANA: I do a lot of the research. I'm sorry if I'm loud. It's just my tone usually, but Mike is on point. Local 3--and I say Local 3 has been around for over 100 years in the city, and it's something that we're good at. Now, I represent the Borough of the Bronx as well and the high voltage testers throughout the Five Boroughs and an instrumentation tech--text, and the jobs are definitely going to others outside of New York and I say we live in New York, we pay New York taxes. Everything we do is New York. I live in the boroughs myself, worked in the boroughs. I'm here in Local 3 for 32 years. So--and I'm first generation, which is the best thing that's ever happened to me, and I never thought I'd be a business rep. You know so it's--it's exciting times for me, but as I do my research and I'm in the outer boroughs doing it, and the Bronx is the next big wave coming with housing along with solar installations. It just seems like

all this work is out of our reach, and we're not even given the opportunity to bid the jobs. And with that we see the accidents on the jobs, higher mortality rates. There are two sets of standards for safety. There's the union standards, which is we're carte blanche, we do everything and then the non-union standards where they're really not held to many. You know, and that's where most of the bulk accidents happen, and when I get the opportunity to speak to non-union solar installers, because I find them all over the place, they all want to join Local 3 and be part what we are to have better wages, to have benefits and pensions. And it seems like, you know, regardless of some--wherever a worker comes from, they do want a better life. So, if we're the means and have been the means to do that and provide it, why couldn't we all be part of this movement, you know, together. You know, and I have a list of the bad jobs, but I don't know if you want to go over that. [laughs] You know, that I've stumbled across and--and to me it was disheartening because I've sat in--I've sat in quite a few meet--meetings with my Mike at the Mayor's Office regarding, you know, these solar installs And I'm just taken aback at how we

were just excluded from it. That's how I would put it. We were excluded.

COUNCIL MEMBER LANCMAN: Wow, unfortunately, it's not unique to you, but we do need to push the Administration to be as concerned about who is performing this work, and what they're getting out of it, and what we as taxpayers are getting out of it by having trained, skilled workers doing this, this work with taxpayer money. Thanks. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you, Council Member Lancman and yes, reading your testimony is why you are a part of the sustainable CUNY working group, correct? And yeah I think that as a CUNY grad and someone that---who recognizes what CUNY brings to the table, I'm equally as supportive of making sure that we do continue that relationship. So that's something that we, you know, we agree on as well, and as far as, you know, job standards and--and Damian, I'm assuming you're expressing these concerns at the Sustainable CUNY, but this isn't the first time you've brought these up, correct.

DAMIAN SCIANO: No, this is not the first time we've brought this up. The Business Manager Chris Erikson of Local 3 he did testify before the

Council back in December regarding resilience, and pretty much echoed the same sentiments I--was in my testimony. I think there's a way that we can do all of this. I think there's a way that we can have good paying jobs as well as to stay to standards and install all of the solar that we are looking for renewable energy, and I also have the bill relating to installing electric car charger stations on city streets, and sort of building out that network. So I think that that's a logical next step to sort of take away and--and using solar to do that. So I think that there's a--a lot of tie-ins that we can do that I think we can all work on together.

DAMIAN SCIANO: I would welcome that. I have a plug-in hybrid myself so I would welcome having that.

CHAIRPERSON CONSTANTINIDES: I mean I'm at the end of my rope with my car. I'm about 120,000 miles and as I've said before, it's been a good run, but I think it's almost time to breakup. But, you know, we need--I need to be able to transition to an electric vehicle. But it's how we build our network out is going to determine again as we scale of that particular industry and--and go green in the

transportation sector and, you know, utilize solar panels to make that happen. So all of this can happen together. So I'm looking forward to--to doing that.

DAMIAN SCIANO: Our--our industry would welcome to be part of the collaboration with you.

CHAIRPERSON CONSTANTINIDES: We're going to continue this, and it's going to be our--our first hearing on this, and as we are scaling out, we're going to continue these conversations and prioritizing these issues. So, we are going to be working together whether it's in hearings or whether it's in--in private and having round tables and discussing issues, we are going to continue have these important conversations. Thank you. So I want to thank you all for your time and I don't have many of my colleagues here. So I'll--I'll let this panel go. Thank you. [background comments] Our next panel is Chris Niedl from Here Comes Solar; Dan Hedrick from NRG, and we have Richard Keiser from Level Solar, and there will be one more panel after this one. If you can all step forward and be recognized and sworn in by our attorney, Samara Swanston.

[background comments]

LEGAL COUNSEL: Can you please raise your right hands. Do you swear or affirm to tell the truth, the whole truth and nothing but the truth today?

PANEL MEMBER: Yes.

CHAIRPERSON CONSTANTINIDES: We can begin there on the right and just move our way out.

Okay, Great. I'd like to begin by thanking the Council and Mr. Chairman for inviting me to this hearing, and for the opportunity to speak to you today about this important topic. I would also like to thank the representatives from Con Edison and Con Edison--Con Edison as a company for its continued support of solar and distributed solar in particular in New York City. My name is Richard Keiser and I'm the CEO of Level Solar. Level Solar is based in New York City and is one of the largest solar energy providers in New York State. I founded the business here in 2013 with two partners.

Level Solar now employs over 200 people across seven counties in New York, and has helped over 1,000 homeowners transition to lower cost, clean solar energy. Today's solar energy means three

things for New York City: Jobs, lower cost electricity and cleaner air and water. New business models like Level Solar's enable homeowners and businesses to transition to solar energy with no upfront cost. This in turn has created a historic opportunity for New York City to transition to a clean energy economy, and simultaneously save money, create thousands of jobs, and dramatically reduce the City's carbon emissions. In my comments today, I'll -I'll briefly explain the important changes that are enabling this solar energy revolution, and how you can bring this positive impact to your constituents and communities.

For the last 50 years, solar panels and other solar energy equipment was expensive. This meant that an investment in solar had a high upfront cost with little or no return. For this reason, it was very rare to see solar on a home or building, and the only people who installed solar panels were the wealthy. Over the last five years, this situation has changed radically. The cost of solar equipment is now less than half of what it was several years ago. This change and others have enabled Level Solar's unique business model, which I'd like to

describe to you briefly. Level Solar installs solar panels on qualified home, schools and buildings at no cost. There is no cost for the equipment, there is no cost for the installation. There are no hidden costs of any kind. Once installed, the solar panels generate clean electricity and Level Solar provides that electricity for up to 25% less than the utility. This enable the home or building owner to save money immediately with upfront cost. In effect, Level Solar becomes a second utility to the home, only the electricity we provide is 100% clean and costs less. This approach to solar energy, which we can do for homeowners, schools and businesses has dramatically the number of people who can save money through solar energy. Today, the vast majority of Level Solar's customers are the middle-class, teachers, fireman, public officials and others who simply want to save money. Many of the homeowners and schools in your district can benefit by transitioning to solar energy today, and I'd like to give you one example of how. In April, Mayor de Blasio announced the Citywide Solar Initiative, which I know many of you supported. The first New York City solarized program is the Solarized Brownsville Initiative in Brownsville,

Brooklyn. I'm proud to share the Level Solar recently won this competition, and was selected as the preferred solar provider for Brownsville. I'm also proud to share that we've received substantial funding from the New York Green Bank to finance these types of program, which specifically include low-income families. Through this program, members of the Brownsville community are partnering with members of my team to accomplish several goals. First, we will work together to introduce solar to the community through a series of joint events. Second, we help the community immediately reduce their carbon emissions by preventing on average over 250,000 pounds of CO² emissions per home. [bell] And third, we create jobs in the community so the community members both drive and participate in the positive in the positive changes that we help create. This type of program is a genuine win-win for the homeowner, for the city, for Level and for the environment. What I ask of you today is your continued support for these programs. In the presentations we've prepared for you, we outline the three largest opportunities for the city. These include schools and municipal buildings; community solar programs; and the Solarize

Initiative. I and my team would love to work with you and your constituents to bring these types of impacts to the communities you represent and our contact information is included in the information we've prepared for you. Thank you again for the opportunity to speak to you today, and I look forward to working with you.

CHAIRPERSON CONSTANTINIDES: Thank you.

DAN HENDRICK: Good afternoon. I'm Dan Hendrick with NRG, and thank you Mr. Chair and Council Members for--for having this important hearing today, and glad to see Queens so ably represented and Brooklyn as well. Just a little background on NRG. Most folks know us from our wholesale power generation side of the business. We have assets in Astoria as well as in--on Staten Island and Arthur Kill. Over the last five years or so, the company has had a major transition toward a clean energy future, and we're proud to be one of the largest solar installers in New York City at this time. And it's--actually about a month ago our company announced that we would be having three focus states, and New York is one of them, and I have to say that's in no small part because of the work the

Council has done to make clean energy a priority. So thank you for your efforts. I'd also like to thank the--the CUNY Solar Partnership, which has been a fantastic resource for us. So thank you for highlighting their great work. Just to narrow down, I think there are a few things--there are some kind of tangible suggestions that I'd like to offer as you work through this next phase, and try to continue to make New York a solar leading city. The first is on community solar, which folks probably know that at least 8 out of 10 people who reach out to developers can't currently get solar on their rooftops because their roofs are shaded. Perhaps they have less than stellar credit scores. There's a range of issues. So Community Solar really represents an opportunity for--to expand solar access to so many different communities. The problem is the PSC order, the way it is written requires the customer and the solar farm to be located in the same load zone. So in other words, if we want to serve a New York City customer we have to build a solar farm in New York City where real estate is at a premium, and where costs are very high. So, for this region we would urge the Council to--as well as the Administration to

advocate for changes at the PSC to allow for solar facilities that serve New York City's customers to be located outside the load zone, and just to underscore the--the problem, we took a look at the interconnection queues in preparation for today's hearing, and I know that the Mayor's Office mentioned this, but just to put some specific metrics on it, this is on what's called the Community Distributed Generation. So right now, Central Hudson has 773 megawatts of community DG in the interconnection queue. Those are potential community solar farms. National Grid Upstate has 492; Orange and Rockland, 365; Con Ed has four. So we're talking less a percent of--of Central Hudson. So there really is a pretty big gap there that folks, just to underscore what the hurdle is. On the residential solar side, we're very encouraged by the Administrations to move to allow more projects to self-certify, pro-certify. Things are moving very quickly, which is fantastic. As for the property tax abatement, which is important, it's going to sunset at the end of this year. I know the Administration has stepped out and asked the Legislature to--to extend those, to extend the property tax abatement would really appreciate if

the Council did that as well. I know it would a--it would be a fantastic shot in the arm for the industry.

CHAIRPERSON CONSTANTINIDES: Absolutely.

DAN HENDRICK: Thank you. And among the more formidable agencies, I'm sorry, the more formidable setbacks that we have to deal with our-- some of the requires group setback from the city agencies. And to be clear, we really do support safety. It's--it's--it's issue number one for us. But a few small changes would make a big difference. For example, allowing owners of adjoining properties to sign an application rather than having to sign an easement agreement. It would allow more properties to qualify for the Consolidated Roof Exception. If we're also able to formalize and streamline the variance process with the FDNY and DOB [bell] that would make a huge difference as well. And finally sort of a small thing, but an important thing, I'm sure if you get meeting requests, if you've ever used a Doodle link you get a range of options to schedule meetings. Right now, the inspection ready portal at the Department of Buildings doesn't allow you to sort of match up a time that's convenient for the

homeowner with a time that's convenient for the inspection staff. So, if--if I know the--the DOB is working on their systems right now. I'm very grateful for the work that they're doing, but the small types of changes like this would really allow more--a better matching system and offer options that can help the customer and meet their needs at the same time. Thank you.

CHAIRPERSON CONSTANTINIDES: Okay, thank you. Next.

CHRIS NIEDL: Great. Thank you very much for the opportunity to appear before the committee today and provide my testimony. My name is Chris Niedl. I'm the Director of Here Comes Solar, an initiative of the non-profit environmental education organization Solar One based here in New York City. Our goal is to facilitate solar adoption in areas of the five boroughs and among specific residential property types for which adoption has historically been limited due to different technical regulatory and financial barriers to provide a comprehensive range of free support services that aim to compensate for and overcome such barriers including education resources and physical assessments for property

owners and access to an online proposal solicitation platform, which enables homeowners, cooperatives and affordable housing providers to receive and review competitive proposals for vetted local contractors. Since launching operations in January 2015, our initiative is facilitated over a megawatt of solar contracts in New York City much of which has taken place in zip codes and on buildings types that the private industry has largely avoided. New York City has always presented a paradox to the solar industry. It is simultaneously the best of markets and the worst of markets. New Yorkers are strongly incentivized to invest in solar because of local electricity rates are among the highest in the country. At the same time, favorable support policies and regulations at the State level are generally conducive to adoption relative to most other states. So latent demand is very high. However, the city's complex heterogeneous built and social environment presents unique urban obstacles that resist the status marketing design and financing approaches that have successfully produced over one million solar installations in the United States as of this year. Most development has largely happened

on roofs in suburban single-family homes and commercial industrial facilities in the form of large utility scales or their farms. In short, in settings, which contrast significantly in their physical and social composition with much of our city. It is not an accident that the borough that has seen by far the highest levels of residential solar adoptions, Staten Island is also our most suburban in its density and residential character. According to New York Research Development Authority's online database, Power Clerk, in the 4,000 residential solar projects have or are in the process of being completed in State Island, making it one of the fastest growing solar counties in the country. The far more populous Brooklyn by contrast literally just there were 700 residential projects completed or underway, in Manhattan less than 50. To be sure, many of the factors that limit solar potential in many parts of our city many never be overcome. That's just a fact of urban density and a dynamic rapidly changing real estate market. However--however, we are a long way from reaching our potential. In the paradox that I just described, which has led to very uneven adoption across and

between boroughs is also revealing itself more recently to be a creative driver of local innovation and problem solving producing solutions that are uniquely situated to the urban setting. The private sector mostly from startups at the margins are pioneering new design in financing approaches that have become--begun to overcome some persistent barriers and increased eligible loose space in ways that were before seen as impossible. Among would-be adopters, we are also seeing homeowners participating in different group, solar and solar initiatives, which have been referenced today at the grassroots level aggregating the purchasing receiving discounted pricing. New regulations such as Virtual Net Meter and Community Shed Solar are not without its limitations provides a potentially powerful basis for new implementation models for New York's multi-family rental property segments that are just beginning to materialize in potentially disrupted ways. However, these innovations alone are not enough to bring solar to scale in New York. For technology to ultimately--for the technology to ultimately play a meaningful role in making our city's electricity system more reliable, affordable and carbon free, the city must

continue to play a deliberate and proactive role in facilitating growth. This means actively removing barriers and approaching problems in new ways, ways that may, in fact, have a little precedent nationally simply--simply because New York presents a unique context for solar implementation. New York City's building and electrical permitting process for solar is historically unbalanced, creating barriers to private sector participation and, therefore, adoption increasing time, uncertainty and costs. However, thankfully there's clear encouraging evidence that this is changing, and this deserves to be acknowledged. The DOB in recent months has implemented changes that have materially altered the solar development process in New York City for the better. A recent increase in the plan examiner staff at the DOB [bell] combined with pro-certification have made solar much easier to do. The department should be--should be commended for its responsiveness for making these adjustments as they made the process of going solar more rapid and predictable. This will lead to more solar happening. The New York City Solar Partnership led by Sustainable CUNITY--CUNY in collaboration with the Mayor's Office of

Sustainability, the NYC EDC, and other stakeholders played an essential role in identifying this need and persistently making the case for these and other changes. And in the process, they illustrated how public sector actors can positively encourage without getting in the way of desired market outcomes. So they deserve our gratitude and continued support. If I could just have one more minute to wrap up.

CHAIRPERSON CONSTANTINIDES: You know if you can--I know you have certain--

CHRIS NIEDL: Yeah, yeah--

CHAIRPERSON CONSTANTINIDES: --policy recommendations.

CHRIS NIEDL: Yeah.

CHAIRPERSON CONSTANTINIDES: And if you can just flush those out.

CHRIS NIEDL: Great.

CHAIRPERSON CONSTANTINIDES: I just want to hear--those are the things we definitely want to hear.

CHRIS NIEDL: For sure. Coming right up. So, however, recent improvements at the DOB should be viewed as an end-game, but rather as a single positive indicator early on what must be a long-term

process of transformation that will necessitate unprecedented levels of collaboration between the private sector and public city agencies. As I enthusiastically--enthusiastically commend recent improvements at the DOB, I also hope that the goal of enabling rapid, safe and exponential solar growth can become an embedded value and an objective that is internal to the department itself. I hope that future improvements to make solar easier and less expensive in New York will come as a result of the department's own growing internal capability to proactively identify and implement solutions to barriers and challenges that emerge over time in its task involving that emerge rather than a result of gradual external advocacy. DOB's solar permitting capabilities must be built to accommodate massive rates of adoption in coming years. Not simply to accommodate today's rate of adoption. As demand grows across new diverse property types that make up the core of NYC's building stock that are largely uncharted territory for the solar industry. New problems and challenges will inevitably emerge requiring an adaptive response from the DOB and other agencies along with solar developers. I believe that

the best way to make this happen is to establish a dedicated division of distributed energy with the DOB. Such a division will aspire to keep pace with the private sector change, and cultivate an institutional level of technical expertise across a growing array--array of clean distributed technologies at different stages of market development not just solar. This division will be well equipped to anticipate change and modify its practices and capacities as needed through close exchange with private sector stakeholders and their customers, and their functions and internal accountability be rooted in the city's broader long-term carbon reduction and liability and resiliency goals. The division should also aspire to simplify and eliminate redundancies in current application and filing requirements in order to limit the probability of error while reducing time and effort. The division would be distributing energy would also have a more proactive and outward facing education and training function vis-a-vis to grow in local solar industry that would help the latter better understand and properly comply with agency requirements. A more open responsive customer service orientation would

sharply reduce the time, effort and resources required to file permit applications and to make corrections in the event of error. Ideally a renewed focus on simplification, education and communication would cut waste and added cost thus making easier and more affordable without compromising DOB's core mandate. We believe that the purview of such a division from a technology point of view should encompass a multiple of clean, distributed energy applications. Solar is sure not the only distributed technology that would be required for the city to meet its goals over time. But their diverse portfolio of applications will play important roles in the broader transformation as well as integration between different distributed applications will become increasingly common and necessary requiring a holistic and integrated permitting process. Consider the example of energy storage, which has already been mentioned today, which is a necessary counterpart to various forms of distributed generation including solar, making one for dispatchable and less intermittent and supporting grid reliability and resiliency objectives. And I'll close with one--one last important point. Change and adaptation are not

only necessary at the DOB. For many years New York City's Fire Code has been one of the main determinants of solar development in our city. Specifically parts of the code that require significant clearance on flat roofs in the forms of pads and setbacks have significantly limited the capacity potential for individual projects and across the city roof scape as a whole. New York is a city of extraordinary architectural diversity, but by and large it is a city of overwhelmingly flat roofs. So the consequences of the Fire Code is possibly the most restrictive in the country. The need to be solar are obvious and it is a matter of basic arithmetic, but they will become consequential as demand increases across the city. In recent years, the Fire Department has demonstrated commendable openness and a commitment to better understanding in accommodating the unique rooftop requirements of solar development in New York and has attempted on a case-by-case basis to permit compromises that do not simultaneously increase risks to safety and property variances within the central mechanism through which such compromises have been reached. However, as--as with the DOB, the FDNY's application reduces things

for granting variances. It is not built for dramatically increased volumes, which the city's goals presuppose. This will be necessary for the city to reach its carbon goals. Even today as the volume of flat roof projects has rapidly grown in the past year, the FDNY's limited capacity to efficiently-review and approve variances has led to slow turnaround times as long as two months by some recent accounts. For flat roof projects seeking essential variances, this addition of time will wipe away any gains made due to improvements at the DOB. Therefore, we strongly recommend a new effort to provide the FDNY with additional support and capacity that would enable it to streamline and accelerate the variance process. We also believe strongly that the Pro-Certification Filing Option now available for pitched roofs should be extended to flat roof projects that have been granted variances since it is our understanding, which has been illustrated today that the reason that such projects do not already enjoy that option is because FDNY concerns about code compliance. In summary and in conclusion, if a variance option is maintained, and the variance application and review process is

modernized and rebuilt for high volumes that the cost of receiving a variance remains the same. And if, Pro-Certification could be extended to flat roof projects that have already received variances, then many of the most significant adoption barriers related to the Fire Code will effectively be resolved. Furthermore, if the Division of Distributed Generation is established within the DOB, it makes sense in the interest of closing loops and reducing project times and costs to embed FDNY personnel responsible for managing the variance process within this division. Thank you.

CHAIRPERSON CONSTANTINIDES: Go ahead. Do you have any-- I want to recognize first my colleague from Brooklyn, Steve Levin. Well, he was here. So we've heard testimony from Con Edison. We've heard testimony from the Mayor's Office of Sustainability. We've heard testimony from DOB and from FDNY. So how would you characterize the improvements? I know this testimony to hearing their--theirs--their testimony today, and where do you really it would be an opportunity to do better?

CHRIS NIEDL: First is the issue of collaboration. I know the--the CUNY team has been

fantastic with that, but I think that can certainly be something more help if, for example, the Fire Department met with, you know, a team of developers on a--maybe a regular basis at least for the time being until things have straightened out. Of course, the--having their systems allow for electronic submittal of documents until 2019 is--is a challenge, right, I mean--

CHAIRPERSON CONSTANTINIDES: And 2019 is tough. I mean I--I told them I like 2017 better.

CHRIS NIEDL: Or 2016, we'd like it 2016.

CHAIRPERSON CONSTANTINIDES: I have a bill that would do that. [laughs]

CHRIS NIEDL: Now, it--it's--it's a--it's a huge thing. You have to keep in mind I mean for--for everybody who's--who's in the business, their--the employees' time to--to hand deliver something to the FDNY is time that they can't be working another application for example. So that would certainly go a long way. You know, that being said, I think the--the level of cooperation is--is there. The door is open. They've certainly been very open to us so it's, you know, I think this--and--and the recent Pro-Certification has really allowed many of our

customers to--to be able to capture the property tax abatement so it's been a big development for us, a big change.

CHAIRPERSON CONSTANTINIDES: Right. Yeah, I would kind of go back to some of the original themes that you brought up during the first panel, which is the key is it's not do sort of increment adjustments based on current day realities, but rather build out an apparatus that can help us meet the long-term goals that we're trying to meet with solar, which really implies massive increases in the amount of rooftop solar capacity. So, I think rather than having nudging from the outside, we can embed within agencies a level of familiar--familiar--familiarity and really a sort of a common shared accountability to reach those goals. Then we'll have--that transformation will happen. Having a division of--of, you know, distributed generation one of doing it, but there's probably other ways of doing it, but that's the key point. You know, how do we--how do we look to what we're really trying to achieve on a large scale--

CHAIRPERSON CONSTANTINIDES:
[interposing] Yeah.

CHRIS NIEDL: --and building on that.

CHAIRPERSON CONSTANTINIDES: Yeah, I--I agree with you, and I think, you know, I was encouraged to hear that they have teams--teams of folks that are working as advocates. So I was--in their testimony when I saw the word just she, I was a little worried. [laughter] But there was one person. I don't know if that person was sick that day, but I--I think that we are trying to figure out a way how to make this codified and I said that earlier.

CHRIS NIEDL: And if I may add one other thing, which I couldn't in my testimony, as we expand solar into types of buildings that maybe have--don't have much precedent outside of New York City, we're going to uncover challenges. It really is important that we--we have a responsiveness that as it happens. I think again in building that capability within the DOB to sort of research and get ahead of those problems, I think is--

CHAIRPERSON CONSTANTINIDES: Sort of coming up with like an educational program to sort of stay ahead of the game. Not only the CUNY--having those conversations about current concerns, but also sort of having CUNY sort of talking about things as

they're developing, as we're--as we're looking to the future not just what we're dealing with now but, you know, five years from now.

CHRIS NIEDL: Which they already do. You know, if anything, I would say add the resources to do that, you know, even--even more fully.

CHAIRPERSON CONSTANTINIDES: Okay.

RICHARD KEISER: If I might there.

CHAIRPERSON CONSTANTINIDES: Sure.

RICHARD KEISER: There are two things just continuing on the comments of my colleagues. I think it's very important to take a holistic approach in looking at the overall permitting and installation process, and both the City and DOB should be commended for putting in place an online system that enables us to rapidly submit and get projects approved, and this is a wonderful system. So thank you. It's equally important to recognize that by accelerating just one piece in the chain, it then will create a bottleneck in the second step in the process. And so, while we will all be very happy about getting our projects approved very quickly, then the queue will build in the inspection process, which has challenging scheduling and is typically

resource constrained, and all of us have gone through this in other markets where typically you have a permitting office staffed by one or two people that is used to getting one or two requests per week, and then all of a sudden 400 come in. And so, we--we should expect severe stresses in other aspects of the system that haven't been automated to the same extent. And then the second thing is just in terms of what the city and other actors can do, the biggest barrier we face as developers in realizing this joint goal of large scale adopt of solar energy in New York is awareness and education among the public. And to the extent that the city can put its resources behind just as the Mayor did with the Solarize Initiative and others that homeowners can save money through these programs that they can immediately reduce their environmental footprint. This would greatly accelerate all of our efforts.

CHAIRPERSON CONSTANTINIDES: Now, I mean I think it's something that we've been discussing in my own district and how we bring homeowners together and--and do a town hall on--on solar, and I think that's something we're looking for, for the fall.

CHRIS NIEDL: Great.

CHAIRPERSON CONSTANTINIDES: Just--June is just not good for budget season. [laughs] We try to do those types of things, but I think come fall I think we're all going to be looking to have those conversations hopefully.

CHRIS NIEDL: Great.

CHAIRPERSON CONSTANTINIDES: All right.

CHRIS NIEDL: Thank you very much.

CHAIRPERSON CONSTANTINIDES: Thank you all for your testimony and--and definitely we're looking forward to continuing to work with you as these concerns come up. As again as I--I said before these are ongoing conversations. They're not just going to happen here at these hearing, but they're going to be, you know, person-to-person and--and meetings and round tables and making sure that where there are challenges we are able to identify them, and we'll pass them in a very quick way. So thank you for your time. All right, we have our last panel. We have Dennis Phayre from Enter Solar. We have Jess--Jeff Lord from Clean Energy Collective, Ronnie Mandler from Best Energy Power and we have Luca Masseur (sp?) from Chia Community Development

2 Corporation. If you can all step forward and be
3 recognized. [background noise, pause]

4 LEGAL COUNSEL: Can you please raise your
5 right hands. Do you swear or affirm to tell the
6 truth, the whole truth and nothing but the truth
7 today?

8 PANEL MEMBERS: [off mic] I do.

9 CHAIRPERSON CONSTANTINIDES: I guess
10 we'll start there on the right, and we'll go way
11 left. [pause]

12 RONNIE MANDLER: Thanks. My name is
13 Ronnie Mandler, and I'm the President of Best Energy
14 Power. Best Energy Power is known as having the
15 largest market--the largest market share of
16 commercial solar in terms of the amount of
17 installation of commercial in the five boroughs of
18 New York City. As such, we have the most experience
19 with the issue impacting the industry, and believe we
20 can give you the best picture of what is going on.
21 First, I would like to thank the New York City
22 Council for giving us the opportunity to testify and
23 share the realities of the day-to-day business trying
24 to expand solar in New York City. I will divide my
25 testimony into two parts: Present and future. I

would like to bring your attention to the following present day issue.

Permitting UV: (sic) While there is a huge improvement in their response time, there are a lot of examiners, the new examiners that have yet to get themselves familiar with the small details of design solar array on rooftops.

FDNY: There are several issues connected to the role and work of the FDNY. There is a tremendous hurdle and delay that is caused by the old requirement of having to submit hard copy. While every desk at the FDNY is equipped with a computer, it seems to be an inability to accept the communication digitally. This can be easily remedied by allowing the FDNY to accept PDF documents in line with standard practice across industries. Simple software upgrades may be necessary, but the missing piece is--the missing piece is truly the agency willingness to adopt and change from outdated and insecure practice. Ideally, an efficient solution would be for the DOB to collaborate on a single submission that those agencies can review. In this way, should an issue arise with the Fire Code on any plan submitted to the DOB, the DOB would contact the

FDNY and the FDNY can respond in a timely manner.

Lastly, the clear passage regulation by the FDNY for flat rooftop commercial requires an update to comply with the needs of modern day living. Solar is used all over the world in big cities, and buildings older than those in New York City. There is not a single record that shows that solar panels created an issue with access to extend--extinguish a fire.

Furthermore, there's no record that because of solar panels on the roof, fire--fire fighter's safety was compromised. I'm sorry to say and it might not be politically correct, but I think the FDNY should learn how to adopt their practice to the new era. Same as soldier have to learn to adopt their practice to any new terrain in the battlefield, so does the firefighter have to adopt their practice to any new terrain containing solar panels on our rooftops.

Con Ed: Lately, we are facing a new issue with Con Ed. There are some places where the network protectors are old so they cannot accept Net Meter. Con Ed--Con Ed then gives two options, either add a relay on the solar system to avoid export of power through Net Meter, or have the customer pay thousands of dollars to upgrade the Con Ed system so

it could accept the export of power with that meter.

As for the first option of adding a relay to the system, I think it's ridiculous as it's counter the-- to the purpose of Net Meter. [bell] In the summer when we have more daylight, most solar systems will export power to get credit in the winter wherein there is less daylight. Avoiding this benefit actually defeats the purpose of solar and Net Meter.

The other option Con Ed suggests is for customer to pay for the upgrade of the network. Since Con Ed has the monopoly on the electricity network, customers do not have a choice. It is ridiculous to ask the customer to pay for upgrades, when it is the duty of Con Ed to do so. Where did all the money paid by the customer all those years go to? I ask the Council Member to look into ruling Con Ed to pay for any upgrade we did to accept Net Meter or reimburse customer for any upgrades they pay for.

The second part of my testimony is regarding the future of business. Commercial Financing: As you well know, the biggest solar instant--impact can be achieved by private sector with commercial size solar and by not-for-profit organizations. while one of the obstacles is

financing, outside of New York City, there is PACE financing, which is the easiest and most economical way to finance any energy efficient product, especially commercial size solar.

Some Facts: Thirty-four states now allow PACE financing as well as most of the largest cities nationwide. Dozens of municipalities in New York State including many of the cities and counties across the states are now offering the public benefit of PACE financing to improve building for energy efficient and for renewable energy as authorized by Article 5L of the General Municipal Law of New York State. Hundreds of New York State's commercial and not-for-profit building owners located in these municipalities are now using or are considering using PACE to help upgraded their building for energy efficiency and solar. Many of them were unable to move forward due to lack of capital to finance the improvements. New York City should not be left behind. I urge you--I urge you to talk to the Energize New York team to discuss PACE Financing that could be--enable using the same templates as other cities across the state. I would ask the Council to meet with Energy--Energize New York, a state agency

to learn more about PACE financing. I believe implementing PACE Financing in New York City will immediately increase the amount of solar. New York City needs solar more than any other county in the state. Yet, PACE is not available here. Last but not least, as you well know, the extension of the New York City Tax Amendment is currently being discussed at the State Assembly. I ask the Council to support this bill as tax abatement is an extremely strong tool to extend the support to solar in New York City. Please understand, without the extension of the tax abatement for a few more years we will see a sharp decline in solar in New York City. And last, I also want to recognize the help of the new city headed by CUNY, by Tria, to help us get all those things that you have asked and achieved. Thank you and thank you for the group trying to achieve that.

DENNIS PHAYRE: Hi. Good afternoon.

Thank you for this opportunity to speak. My name is Dennis Phayre and I'm a Business Development Director with Enter Solar, LLC. We're a New York City based solar developer with nearly 40 employees, ten years in business, and a strong national presence. We're also the--the number one commercial and industrial

installer in the State of New York, and we're number six nationwide, which means that we do most of our business outside of New York City even though we're located here in New York City. Over the last four years, things have improved so much in New York City largely due to the efforts of Sustainable CUNY and what the Council has done that the market here has become much riper for doing business here and now. So I--I am going to go a little bit off script here because of what's been said, and just kind of focus on what I think is within your power to do that really will help to keep the market moving forward. The--the number one issue with doing large scale solar projects in the city is really siting them. It's making the economics of getting access to a rooftop to work within the city. The--the property tax abatement is critical to that. In fact, it--you--you might even think about going to the 2.0 version of that and extending it even further because if you want to get big solar done in New York City, you're really going to have to crack that nut there. There's no shortage of a market. The--you know, unlike some of my colleagues, I actually think that the fire regulations on large scale solar are quite

sane and--and--and really based around safety. And if you look at from the perspective of firemen who are getting off ladders in the middle of the night in a snowstorm, and have to hit all four sides of that roof looking for people, they need to know what's up there. They need to know that it's consistent, and creating a system based on providing more and more variances rather than creating sound rules that work that we abide by again and again is not the solution. You want to have a system that you can repeat that doesn't require all of these changes and variances. You want one that works over and over again. And I think that--that again, the folks at CUNY have done a great job of bringing together voices and letting it be known. It's in that dialogue. You know, we're far enough along in the game now where the--we--we have had these discussions for a long time. There are a lot of little things that need to change. Many of them are internal to organizations that are beyond your ability to control, whether it's up at the Public Service Commission or within Con Edison. Con Ed has done, you know, taken great strides to improve things. They still need to have more people on the inside. They need to communicate better internally.

You can't have a project lingering for two, two and a half years in an interconnection queue, and still have a viable project going in the end there. It's not exactly something you can do the most about, but really it's the property tax abatement issue is the number one thing that you can do. If that goes away, you're going to have an uphill battle. You save that one thing, everything else you can solve incrementally, but that's the big one you've got to jump on, and we'll help you up--up north there. And I think I'll stop there, leave the rest for questions and let my colleagues--I just will say one last thing that, you know, being that we're--we're in that CNI space, we're--we're also in the community solar development space as well, which is largely large scale solar projects. So knowing how to do large CNI projects in the city is the key to getting community solar done as well because they're not going to be done small scale. They're going to require larger scale projects, and my colleague Jeff Lord will speak more to that in--in detail. So I'll leave it there, and thank you.

CHAIRPERSON CONSTANTINIDES: Thank you.

JEFF LORD: Hi, I'm Jeff Lord, Vice President of Project Development for Clean Energy Collective. I thank you, Mr. Chairman and members of the committee. I really appreciate you spending so much time and effort and interest on this important topic. I'd also like to thank our friends from Con Edison for staying around and listening, as well as the folks from the Department of Buildings. I've done solar in lots of different states, and I've never seen a utility stay in the room. The utility people and the administration people they come in, they get to testify first, and then they leave. So thank you very much because that's--that's real leadership. I appreciate it. Clean Energy Collective applauds the--the commitment of the City of New York to providing its citizens and businesses the ability to build a better energy future for all. And, in fact, that future is now. Community shared solar also known as CDG here in New York State represents the one approach that provides equal access to the benefits of solar to all New Yorkers even those who rent or lease or whose property is shaded or otherwise unsuitable for a rooftop installation. Community shared solar represents the

true democratization of solar energy. And, to put some things into perspective, the benefits from each one megawatt of community shared solar that's installed in New York City are very significant. Each such system will produce over 30 million kilowatt hours of clean renewable power over the first 20 years of its life. The energy savings from that is more than \$10 million. The majority of that savings is spent by residents right in their local community and, therefore, has a multiplicative effect in the local economy. Each project equates to a reduction in CO² emissions of about 55,000 pounds, which is the equivalent of about 60 plus thousand car miles driven. It's significant. The New York City Solar Partnership, a collaboration among three city entities really has jump started the solar marketplace in New York City, and is now helping to ensure successful market mechanisms such as community shared solar and Solarize New York. The partnership through the Solar Ombudsman also offers really much needed support and assistance on solar permitting programs and training. Their work should be commended, and we urge the Council to continue to support the New York City Solar Partnership and its

vital mission. We also urge the Council to tell the legislature clearly and repeatedly that the Property Tax Abate--Abatement must be at least continued, and preferably expanded as it is essential to providing building owners in New York City the necessary impetus to commit the roofs to solar for the next several decades. Without these building owners willing to host systems, then virtually the majority of New York City residents will be shut out of the ability to participate in the benefits of solar energy, and the city itself will lose the \$100 million of economic impact that comes with each 10 megawatts of community shared solar. So we spoke earlier today about several hundred megawatts in goals. Every ten megawatts of community shared solar is \$100 million of economic impact right in the city. So the--the stakes are high. The benefits are great, and I think with everyone working together that we can all get there. Thank you.

LUCA MASSEUR: Good afternoon. Thank you for your time this afternoon. My Luca Massseur (sp?) and I work for Chia CDC in Queens. Chia means shelter or shade in South Asian languages, and providing New Yorkers with shelter and stability is

the goal of our work. For more than 15 years now Chia CDC has been provided--providing essential direct services to New York South Asian and other communities. Climate change is already making the United States hotter and much greater than temperature increases I expect in the coming decades. Along with increasing temperatures, precipitation patterns are shifting, extreme weather events such as storms and droughts are increasing and sea levels are rising. These changes in weather patterns affect both energy demand, especially with increased peak electricity use for air conditioning and energy supply with the reduced reliability and efficiency. Energy efficiency is one of the most important tools for avoiding climate change by reducing use of fossil fuels. With higher energy efficiency programs we try to help in my communities to get access to available public resources to conduct necessary repair work, and make their homes energy efficient, which also helps them economically by reducing their utility bills. In a recent report published by the American Council for an Energy Efficient Economy, it highlights that low-income African-Americans, Latino, low-income multi-family and rental households all

spent a greater proportion of their income utilities-income on utilities than the average family, thereby increasing their energy burden. Energy burden is the percentage of household income spent on home energy bills. The also have identified energy efficiency as a under-utilized strategy that can help reduce high energy burdens by as much as 30%. Last year, we counseled around 60 clients, but because of limited funding resources, only ten were able to get retrofits done. We need to add more resources to our programs that will help make this LMI and low English proficient communities sustainable. Introducing solar to the community is a step towards this approach. The directional program like Affordable Solar and New York Sun is a big step, and we want to provide access to those resources to our communities. In this hearing today, I would like address the Committee on Environmental Protect to support organizations like ours. We're working tirelessly to bring resources and direct services to population who otherwise would not be able to access such resources. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you.

All right. So then I--I--I'll ask you the same

question I asked the last panel. So you--you know--I know you had prepared your testimony prior to hearing from Con Edison and from the Department of Buildings, FDNY. You know, what are your thoughts on some of the things that they've talked about today, and--and, you know, what can we do better in the future?

RONNIE MANDLER: I believe you heard like the testimony of the FDNY, the kind of--the first answer you 2019, and you're asking to have a 2017. Why not next month? I mean the whole world--

CHAIRPERSON CONSTANTINIDES:

[interposing] Yep.

RONNIE MANDLER: --is working with PDF. Every desk has a computer, has a desk help. So it's something which--which--which is very easy. Another thing, the DOB and the FDNY installed those big screens a while ago that they can communicate. Why won't we submit it to the DOB and then if there's any kind of--anything to do with the Fire Code, they'll approach for the Fire Department, get an answer, have a request for variance, what should be the variance, what's going on with that, or actually automatically approve the variance. We can make it very efficient, and the DOB did great steps, and it's really quick.

What's holding everything? They told you right, the FDNY, it's taking them 40 days. Sometimes it's eight weeks to hold on a variance. I mean they can look at it. I believe all the hurdles that we have or any kind of a problem with the--any kind of plan with the Fire Code, they can say go, no go. It's kind of--it's something that doesn't have to take four weeks or eight weeks. So, I believe that's the biggest thing that we--we--we have right now. The--Chief Pigott mentioned like going down to four feet rather on a flat roof. The big--the big portion of solar it can be achieved with commercial, and those are flat roofs. So, yes, it is a big step with residential, but accumulating a lot of residential can be a lot of solar, but with one commercial you can do a few like tens of residential in terms of size. And the whole idea is getting the biggest solar as we can in the whole city. So if they can give that the priority, that's what we--and again, why to wait until next year? They know it's a problem. They discuss it's a problem. I'm sorry. It's maybe like I said, this particular--get your act together, and like make the change. We all want to achieve the same goal.

2 CHAIRPERSON CONSTANTINIDES: All right.

3 I hear you.

4 JEFF LORD: I can tell you from speaking
5 with the Fire Department it's a budgetary issue.
6 They don't budget for IT. They budget for safety
7 equipment. If you want them to move this--move
8 forward their agenda, fund it and they will. And
9 again when it comes to building a process that you
10 want to move forward, and not be delayed, don't rely
11 upon variances. Rely upon solid and sound rules.
12 Follow the rules, build--build safe solar and build
13 lots of it.

14 DENNIS PHAYRE: Yeah, I think that we've
15 heard a lot of great things today. Certainly the
16 willingness on the part of FDNY to--to simply
17 recognize, look if we can be more flexible on a case-
18 by-case basis, they're open to that. I think that it
19 really comes to really back down to Sustainable CUNY
20 playing just such a critical role of being able to
21 connect the various stakeholders to have those--to
22 facilitate those conversations so that it's not just
23 when you call a hearing, people come here and very
24 well intentioned say the right things. But with
25 Sustainable CUNY being able to follow up and say,

okay, let's get DOB and FDNY together with some industry stakeholders. Can we make some tweaks right now to the Fire Code with the setbacks on flat roofs, or do we want to look at the variance process and keep facilitating that. I think with Con Ed, and maybe I had a little different perspective. I've--so I grew up in Syracuse, lived in Schenectady, lived in Manhattan, lived in Suffolk County. So I've--and I've done solar all over the country, and I spent 14 years at utility and now in my year at non-utilities. And so, I try to remember from days at utility--utility is kind of busy doing really important stuff like keeping the lights on. Distributed generation and solar and things while they're really important, that's my business and a lot of other people's. The utilities are having to adapt to dealing with something that is not part of what they're really designed to deal with, and deal with on a time frame. I mean I--you know, and as a utility we did our capital planning and our system analysis, you know, five years out and/or--and more. Now you're asking them to do that stuff, and do it, you know, in a few weeks. We start screaming if they don't get back to us in a month. So, we just need to recognize that--

that that's an evolution. Now, I think the utility has to recognize that they need to--to do their best to move quickly and effectively and efficiently. I think the industry has to also come at it with the right level of understanding, but I can say that, you know, my dealings with Con Ed they've been very open to being able to pick up the phone and call the right person there and just ask a question rather than have to go through an overly formal process sometimes on a certain something that's truly just a question. They should be applauded for that. Some of the solutions, such as what was described earlier they have figured out to enable solar, and then taking that solution and say, hey all of you other projects, you kind of fall into the same basket as what we figured out over here. So we're happy to do this on your other projects. That's been really great. That's the kind of thing that I think is really an example for other utilities quite frankly to follow, and should be applauded with--with Con Ed. I would say that with DOB and FDNY and Con Ed in total the piece that I think we need to remember is they're fairly well designed I think for when everything is working right and--and the work is coming at them reasonably. But

when they get overly busy, or when all of a sudden there's a rush of applications or one of the handful of people that's in that particular group maybe leaves to take different job or is out sick or is out on leave. You know, when--when the system gets stressed, we can't--you know, it doesn't take long for suddenly all these projects in a multi-month long backlog, and that could be with any of the--the parties we've mentioned. So I thin that we should encourage them to really design a resilient process instead of an inter-related processes, and I think that bringing it back to Sustainable CUNY as being the ones that can continually drive that and ensure that on behalf of the City of New York is--is critical.

CHAIRPERSON CONSTANTINIDES: All right. So, [coughs] And I definitely appreciate your time, and your, you know, your testimony today, and--and contributing to this conversation. I mean this is this--this particular committee, we've had--this is our second hearing on solar in 2016. So this is something that we are taking extremely seriously, and are looking forward to having a longer conversation here. I definitely want to make sure I thank, you

know, the Mayor's Office of Sustainability and DOB and Con Edison and--and Sustainable CUNY for being in the room for the whole hearing. I think that, you know, a lot of what we've heard today is important as part of the conversation starter to see how we can move forward, and continue to accelerate time frames in a safe way. And moving forward, of course, the tax abatement we'll have a letter out. That seems to be the---the--the common theme that is running through everyone's testimony today. It's something I don't have necessarily the power to do here as city elected official, but I will be certainly writing, working with my colleagues here to craft a resolution and letters to Albany and to lobby Albany to make sure they understand the importance of this tax abatement to the residents of the city of New York, and as we scale up. I think you brought up--you know, many of you brought up this really good point. Because right now we're in a--a better place, but how do we make that scalable? How do we continue as we get to that 100 megawatts in--in the--in the city sector as we get to the 250 megawatts in the private sector and go beyond those goals? Those are really just. Those are goals that we're setting but, you

know, goals are sort of created to be beaten. No one said I just want to make my goal. You want to lose more than the 20 pounds you set out to--to lose. You want to--as we scale forward how do we do that in a way that is--we can codify and ensure these good practices done year after year as the system gets bigger and bigger. So I look forward to working with everyone here in this room, and I want to thank our staff today, our attorney Samara Swanston who always does an amazing job, and our Policy Analyst Bill Murray as well, and a belated happy birthday to Bill. Jonathan Seltzer who is our Finance Analyst who is not here today, and my own staff Nick Lozowski and my Legislative Director and thank you Council Member Lancman for being here for the duration, and with that, I will close this hearing on solar power.

[gavel]

C E R T I F I C A T E

World Wide Dictation certifies that the foregoing transcript is a true and accurate record of the proceedings. We further certify that there is no relation to any of the parties to this action by blood or marriage, and that there is interest in the outcome of this matter.



Date June 18, 2016