CITY COUNCIL
CITY OF NEW YORK

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Of the

COMMITTEE ON ENVIRONMENTAL PROTECTION JOINTLY WITH COMMITTEE ON CONSUMER AFFAIRS
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B E F O R E: COSTA G. CONSTANTINIDES
Chairperson

RAFAEL L. ESPINAL, JR.
Chairperson

COUNCIL MEMBERS: Stephen T. Levin
Rory I. Lancman
Donovan J. Richards
Eric Ulrich
Vincent J. Gentile
Julissa Ferreras-Copeland
Karen Koslowitz

A P P E A R A N C E S (CONTINUED)

Susanne DesRoches, Deputy Director
Infrastructure and Energy serving
Mayor's Office of Sustainability and
Mayor's Office of Recovery and Resiliency

Annel Hernandez
NYC Environmental Justice Alliance

Carrie Dietrich, Member
350 Brooklyn, Local Chapter of 350.org

Scott Kessler, Director of Business Development
LO3 Energy and Brooklyn Microgrid

Daniel Carpen, Professional Engineer

Cecil Corbin-Mark
We Act for Environmental Justice

[sound check, pause] [gavel]

CHAIRPERSON CONSTANTINIDES: Hi. Good afternoon. I am Council Member Costa Constantinides, Chair of the Environmental Protection Committee, and I'm pleased to co-chair today's oversight hearing on the feasibility of microgrids with Council Member Rafael Espinal, Chair of our Consumer Affairs Committee. Microgrids are another tool the city could invest in to provide reliable energy sources, and to ensure that our energy infrastructure is resilient against extreme weather events while reducing pollution and greenhouse gas emissions. A microgrid is a group of interconnected local energy resources with clearly defined electrical boundaries, a relatively small local power network. A microgrid consists of electricity generation sources, electricity users and control equipment within a geographically defined area. Although microgrids are usually connected to a centralized electrical grid, they can also operate on island mode, which means they can access locally generated electricity regardless of whether the larger centralized electric grid is fully functional. Numerous utilities have proposed microgrids as a way of hardening and

improving utility infrastructure and resiliency. The potential for microgrids is significant because they can be powered by a variety of energy sources including combined heat and power, district geothermal, in conduit hydro power and solar thermal or solar—solar voltaic energy, all which may be feasible to power microgrids in New York City. Geothermal's energy systems combined with photo—solar voltaic systems cannot only provide reliability, but can also do so by generating minimal or no greenhouse gases. In conduit hydropower can be used at a local site or connected to the grid, and can be designed to support district geothermal systems for heating, cooling and electricity when electricity utility service is unavailable. This is important for our city because energy can account for as much as 10% of local government's annual operating budget. A proportion is likely to grow as energy prices rise. Microgrids do currently exist in New York City. For Example, Co-Op City in the Bronx is a microgrid powered by combined heat, and power that serves some 50,000 residents in 35 high-rise apartment buildings and seven townhouse developments, three shopping centers and five schools. Co-op City's microgrid has

made news, and ensured that the community did not lose power before, during or after Super Storm Sandy. However, we need to explore how we can build more microgrid infrastructure for communities around the city. New York City has a nine-month heating season. The largest cost in heating is the cost of fossil fuel providing heating, cooling, electricity without paying for the cost of fossil fuel will ensure the benefit to the public and consumers. The only sustainable way to the future is to reduce and transition away from the use of fossil fuels. Microgrids will help us achieve economies of scale as they move towards a fossil fuel free future.

I want to recognize we are joined today by Council Member Rory Lancman from Queens, and now we will hear from the great chair of our—our Consumer Affair Committee. Oh, Eric Ulrich as well from Queens is here. Thank you Eric. I missed you there on my right because I was looking to my left. Our—our great chair of our Consumer Affairs Committee Council Member Espinal.

CHAIRPERSON ESPINAL: Thank you so much, Costa. Good evening. Good afternoon, I should say. My name is Rafael Espinal. I'm the chair of the

Consumer Affairs Committee. Today, I am pleased to co-chair this hearing with the Chair of the Environmental Protection Committee, and my colleagues Costa Constantinides. I believe it is absolutely important to explore the feasibility of microgrids and that our city should take the lead on this. Microgrids will be a key to our city's sustainability both as a daily source of power in emergency situations. Super Storm Sandy resulted in the deaths of 44 New Yorkers and caused $19 billion in damages and lost economic activity. The environmental events impacted the city's infrastructure including its electricity generation and distribution system causing power outages to critical facilities including hospitals and nursing homes and leaving 800,000 New Yorkers without power. We must be better prepared. We saw then and continue to see with recent hurricanes in Florida, Texas and Puerto Rico what these destructive environmental disasters can cause and how essential it is to be repaired. More than this, the New York City Panel on Climate Change projects that by they year 2050 in New York City extreme weather events are likely to worsen. Heat waves, heavy downpours and coastal flooding are also

likely to increase in frequency, extent and duration. So the time for action is now. A microgrid is a small power network that is capable of generating and sharing power with those on its grid. It can disconnect from the grid and operate autonomously, which is touted as having the potential to not only enhance the stability of our grid and increase the city's resiliency, but also increase renewable energy sources for consumers. I've seen them—I'm seeing amazing work done particularly in Brooklyn where entire blocks are being powered by one neighbor. For example, one company, Brooklyn Microgrid has created a community powered microgrid consisting of property owners with solar panels on their roofs. The company uses a Smart Phone app and Blockchain ledger, a technology related to Bitcoin that only enables these producers or consumers to sell excess energy back to the utility, but also enables them to sell energy to each other as well. This energy sharing is not unlike other aspects of the emerging share economy that offer—that offer new market options that require government to adopt new regulatory challenges. The possibilities for economic growth, efficiency and decreasing of—of reliance on power conglomerates are

endless. Communities that have microgrids installed can reduce their vulnerability to power outages due to extreme weather events. They'll become more resilient and self-sufficient in the long term. While we're not—while we are not hearing the bill today in this oversight hearing, I'd like to mention that I am—I have introduced a bill Intro No. 1567 co-sponsored by Council Member Costa Constantinides, which will require the Office of Long-Term Planning to issue a report on the feasibility of microgrids. Therefore, we are very interested in hearing your ideas on this topics and suggestions you may have about possible spaces where microgrids could be set up, laws and rules that are applicable to building a microgrid and any impediment faced. This hearing is a local opportunity to learn more about the universe of microgrids. Will they fit into our city's needs and how they may affect the city's consumers. I want to thank the Chari again, Constantinides for holding this hearing with me. I look forward to our continued work on this issue.

CHAIRPERSON CONSTANTINIDES: Alright, I look forward now to hearing from the administration.

So, I'll have Samara Swanston, our Attorney, swear you in.

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

DEPUTY DIRECTOR DESROCHES: Yes. Thank you. Good afternoon, Chair Constantinides and Chair Espinal, and members of the Council's Environmental Protection and Consumer Affairs Committees. I am Susanne DesRoches, Deputy Director of Infrastructure and Energy serving jointly in the Mayor's Office of Sustainability, and the Mayor's Office of Recovery and Resiliency. Thank you for this opportunity to address the feasibility of microgrids in New York City. It's timely that we're discussing microgrids today. Our electric grid is one of the most critical lifeline systems in our city. It powers our buildings, our hospitals and our transit system. When it fails, as Hurricane—Hurricanes Harvey, Irma and Maria tragically have shown, it can have cascading impacts for our telecommunication system, our economy and our access to healthcare. (coughs) Following the devastation of Hurricane Sandy, the

city and the state supported the evaluation and installation of new microgrids in the city that can function independently from the central electric grid, and can support critical loads in the event of a power outage. As we have seen, microgrids make sense as custom design solutions for a set of specific objectives from energy efficiency to cost savings to utilizing renewable energy, and ensuring resiliency to the risks of climate change. There are various definitions of what a microgrid is. The city's working definition of a microgrid is a—is local generation or a set of local generation sources that can be selectively dispatched to distribute power and in some applications thermal energy to more than one building, and can in the event of a grid outage operate independently of the electric grid to continue to deliver critical power needs. There are two distinguishing features of microgrid. Microgrids can serve—microgrids serve multiple buildings rather than a single building resilient energy solution and microgrids can island or disconnect themselves from the broader grid to continue to serve a set of local critical loads during a grid outage. There are two main types of microgrids. The first type has been

developed for campus style settings where a single entity owns and manages a set if buildings. This type of microgrid has been popular for decades, particularly amongst the—among universities and military bases. The second type of microgrid is a multi-owner or a multi-user microgrid where a microgrid serves a mix of buildings and facilities that are owned by multiple entities. This is commonly referred to as a community microgrid. We're currently unaware of any community microgrids that have been successfully put in place in the U.S. However, in the past several years there has been a renewed interest in the multi-user microgrids, and several are currently under—in design in the feasibility stages. The value of microgrids has traditional been centered on improving energy efficiency, reducing energy costs and increasing resiliency to provide power during an outage as we saw during and after Hurricane Sandy. As mentioned earlier, microgrids can make sense as a custom designed solution for a set of site specific project objectives ranging from increasing energy efficiency and cost savings, renewable—and utilizing renewable energy, avoiding carbon emissions and ensuring

resiliency. The city's Community Energy Planning Analysis detailed in the Roadmap to 80 x 50 Report was a first step to understanding where microgrids can provide the most benefit to the city. As we learned, the microgrids objectives determine which technology is used and, therefore, the microgrids' capabilities. For example, if the goal is reduce energy cost, then it would—could be cost-prohibitive to also make the microgrid resilient. Similarly, if the goal is to maximize renewable energy use, renewables may be more expensive than what's on offer from the local utility. In short, there are benefit trade-offs with microgrids. Depending on the number of buildings and the energy load required, microgrids can be costly multi-year infrastructure projects. Moreover, the Con Edison Grid as a whole experiences some of the lowest outage rate—rates in the country complicating the economic case for a microgrid when it is tied to goals other than improving resiliency of critical public services. Recognizing that microgrids can be complex and expensive, which may not be feasible and/or cost-effective in all parts of the city, the de Blasio Administration is never—nevertheless broadly supportive of them because they

can help us achieve a range of our OneNYC sustainability, resiliency and equity goals. To that end, the city is interested in helping to facilitate microgrids particularly community microgrids that can provide energy resiliency, and integrate renewable energy resources and storage. However, because of the site-specific and complex nature of these projects conducting a feasibility study for the entire city will be very challenging. It would not necessarily lead to the development of any specific projects. [door bangs] There are several microgrids functioning in the city today, and several more in the design—feasibility design and construction stages. For example, campus style microgrids have been built at New York University in Manhattan, Starlet City in Brooklyn and Co-Op City in the Bronx. They NYU and Co-Op City microgrids garnered attention after Hurricane Sandy because of their ability to provide resilient electricity and thermal energy. There are several commercial projects in design and construction including a 13 megawatt microgrid system for Hudson Yards. The city is also exploring the feasibility of microgrids at several other sites. As part of ORR's Hunts Point Resilient Energy Pilot

Project, the City is assessing the feasibility of a microgrid for the Hunts Point Food Distribution Center. NYCHA is also in the process of developing a microgrid at the Red Hook Houses, which suffered severe damage during Sandy. The microgrid—the Red Hook microgrid will provide power to the Red Hook Houses during an area or citywide outage. The Department of Environmental Protection is also developing a 15 megawatt system for the North River Wastewater Treatment Plant in Upper Manhattan fueled by bio gas and natural gas. New York State is also supporting the expansion of microgrids in the city. The New York State Energy Research and Development Authority, NYSERDA, through its New York Prize Grant Program is funding the development of microgrids. The first phase of New York Prize awarded $100,000 individual grants to 83 projects across New York State to conduct initial feasibility assessment, and 11 of those projects were located here in the city. In the second phase in early 2007, NYSERDA awarded $1 million grants to 11 projects statewide to conduct detailed engineering designs and develop business plans, and three of these projects are based in the city. The initial 11 based microgrid projects range

from $27 to $273 million for capabilities roughly between megawatts and 20 megawatts, enough to power up to 5,000 and 25,000 apartments respectively. There is also a project in Brooklyn at the Markets Garvey Houses that incorporates solar plus storage and a natural gas powered fuel cell that was financed by New York City Energy Efficiency Corporation. All existing microgrids in the city, I mentioned above, are nature gas powered. While microgrids in design are integrated—are integrating sources of renewable power such as solar plus storage where feasible. There are technical, business and regulatory issues that affect the feasibility and cost of expanding microgrid projects in the city. A building's infrastructure plays a key role in the feasibility of a microgrid. If the existing building is not currently wired to separate—to separate critical from non-critical loads, rewiring the internal electric distribution system is a significant expense. Buildings also need sufficient space to house the necessary mechanicals or mechanicals on or on the roof--sorry, there's a little typo there—that can bear the weight of heavy equipment. If the building is in the flood plain, the mechanicals will also need

to be protected from flooding. Another consideration is where the proposed microgrid is located on Con Edison's system, and how the microgrid can technically be configured to island. The configuration of Con Edison's Network can make it very challenging to take a section of the electric grid and isolate it from the surrounding system to create a microgrid. There may also be grids—costly grid upgrades necessary to support the amount of onsite generation proposed. Given the city's dense environment a project may also need to install its own electric distribution wire so that the microgrid does not negatively affect the delivery of electricity to neighboring buildings not within the microgrid. The cost to install private wires can be every expensive especially if installed underground. The owners and operators of this section of private wires will also need to—will also need an operating and maintenance contract for the upkeep of the microgrid system. With respect to the businesses and models, there are few, if any, effective governance and contractual models for multi-user microgrids, although this is an area that is evolving. For a microgrid—for multiple-user microgrids, there is no

clear regulatory framework since microgrids have components that can subject—be subject to a variety of pre-existing regulatory constructs. For instance, microgrids generate, distribute and sell electricity--sell energy to end-users traditionally the purview of utilities and power generators. However, traditional regulatory models that apply to utilities and generating assets might not be appropriate for microgrids given the differences in scale and magnitude and number of potential stakeholders affected. The lack of regulatory certainly and the risk that it brings to a project is an issue that the de Blasio Administration continues to discuss with the New York State Public Service Commission, PSC. The city is a vocal advocate for regulatory and utility tariff reform that supports microgrid development in New York City. For example, the city was effective in advocating for an exemption to the standby rate, which is an additional charge the utility imposes on owner-operators of on-site generation systems such as combined heat and power systems, which are a common feature of microgrids. Similarly, the city advocated for Con Edison to develop a multi-user offset tariff, which allows

projects to use on-site generation to offset use—energy use in multiple buildings. To help identify key pain points and challenges as well as to promote effective business models and regulatory solutions for microgrids, the city has convened a Microgrid Collaborative featuring key stakeholders including Con Edison, NYSERDA, the New York Power Authority and others. In addition, the city is also working with the Smart Grid Consortium to identify policy and regulatory hurdles to deploying—deploying microgrids in New York City and New York State. In conclusion, I would like to thank the committee for this opportunity to discuss the city's approach to microgrids. It's clear that microgrids can serve multiple purposes as we seek to increase the sustainability and resiliency of our city. I would be happy to answer any questions you may have.

CHAIRPERSON CONSTANTINIDES: Thank you. I just want to also recognize we have been joined by Council Member Donovan Richards from Queens as well, and with that I have a few questions before I turn it over to my co-chair. First, we talk about resiliency. How does the city view microgrids as part of its resiliency plans?

DEPUTY DIRECTOR DESROCHES: Sure. So microgrids are a—are a component of the city's resiliency plans. Where they are feasible and—and where they can supply critical loads to hospitals and other types of critical public services we're interested in the development of those. The three New York prized projects are of particular interest as those focus on some critical services.

CHAIRPERSON CONSTANTINIDES: So—so, you mentioned the—the Red Hook Houses as a place where microgrid is being installed. Have we looked at other areas that were affected by Hurricane Sandy, and how we can use microgrids for those places as well?

DEPUTY DIRECTOR DESROCHES: Sure. So, in the 80 x 50 Roadmap, we did an analysis that overlaid the flood plain and also heat risks to try to identify where community energy planning would be most beneficial. The city is looking to make that information public in the—and hopefully in the next year. We're targeting next year. So, you'll see parts of the city that will—that we think are community energy solutions including microgrids will be most feasible.

CHAIRPERSON CONSTANTINIDES: Great because I know that I—I have a public housing development that was the only place in my district to lose power, and they lost it for close to a week, and—and--

DEPUTY DIRECTOR DESROCHES: Uh-hm.

CHAIRPERSON CONSTANTINIDES: --I think if there's opportunities for us to protect residents of public housing by doing microgrids throughout the city in low-lying areas, that makes a lot of sense. So, how are engaging beyond this—this—this sort of task force with NYSERDA?

DEPUTY DIRECTOR DESROCHES: So, it's—it's important to recognize that these are new projects for the city when they're multi-user, right, and that's what's so exciting and interesting about the New York Prize project given the regulatory hurdles and also having to construct the owner-operator models that are multi-user. We want to make sure that we closely monitor how those projects are designed and—and that, and see how they move through into construction before we embark on many other microgrid solutions throughout the city.

CHAIRPERSON CONSTANTINIDES: I have the conversations with-with Con Edison so far in making this work, right?

DEPUTY DIRECTOR DESROCHES: So, Con Edison is an active partner of those projects, and they are part of the other stakeholder groups that I—that I mentioned. You know, microgrids are part of the distributed energy resources that both the state and the city are interested in changing how our energy grid works.

CHAIRPERSON CONSTANTINIDES: So, the next question that is relating to steam. How do we look to incorporate steam as part of our—in consideration for Microgrid potential?

DEPUTY DIRECTOR DESROCHES: Sure. So, microgrids by definition are delivering the electricity, right, but often they can be—the power can be delivered—can be generated through a co-gen plant, right, and that can also make steam, which can provide heating and cooling. So, cogeneration is an efficient way to—to build the power source in a—at a localized scale. So, the—the most bang for your buck, the most efficient and cost-efficient way to do

these things is to do cogeneration with steam, heat and—heat and hot water.

CHAIRPERSON CONSTANTINIDES: And we're seeking to do that in--?

DEPUTY DIRECTOR DESROCHES: So, most of the New York Prize projects have cogeneration-has the cogeneration element, and some of them have also incorporated small scale renewables and some storage as well.

CHAIRPERSON CONSTANTINIDES: And—and-and what energy source would the—could the city more fully consider as part of microgrids? Where are we—what's sort of the next thing? So, I know it's a new technology, but where is sort of—where are we going geothermal and others?

DEPUTY DIRECTOR DESROCHES: Sure. So, I think it's important to—to recognize that as I—as I laid out in my testimony that each one is sort of site specific right, depending on what the loads are. So a hospital's load is going to be different than a university load. It's going to be different than a residential area load. So, we need to make sure that we're matching the correct technology to what that microgrid would be serving. It needs to have both

the-the heating and cooling component and the electric component if it's going to be a full system that might utilize geothermal.

CHAIRPERSON CONSTANTINIDES: So, there—there isn't like one particular energy source? Either it's geothermal, renewables, co-gen, we—we really there's not one sort of type fits all?

DEPUTY DIRECTOR DESROCHES: [interposing] It's not a one type fits all. As I said earlier, much of—most of the systems are relying at least primarily on a co-gen system--

CHAIRPERSON CONSTANTINIDES: Right.

DEPUTY DIRECTOR DESROCHES: --because it can generate the electricity and the—the heat and cooling.

CHAIRPERSON CONSTANTINIDES: Alright good and at this time, I'm going to turn it over to my colleague Council Member Espinal.

COUNCIL MEMBER ESPINAL: Thank you. Thank you, Costa. A question just to piggyback on—on his question of where these grids are located. Are you aware of the grid? You most likely are that's in Brownsville, one of the Brownsville NYCHA developments?

DEPUTY DIRECTOR DESROCHES: Can you clarify what you mean by the grid?

COUNCIL MEMBER ESPINAL: It's a microgrid I believe in one of the housing developments in Brownville that was—that was installed recently.

DEPUTY DIRECTOR DESROCHES: So, I'm not aware of one that was installed. I am aware of a New York Prize project that was in Brownsville--

COUNCIL MEMBER ESPINAL: Okay.

DEPUTY DIRECTOR DESROCHES: --and that made it through the first stage of New York Prize and did a feasibility assessment, that first $100,000 assessment.

COUNCIL MEMBER ESPINAL: So, they—they received that grant to—to--?

DEPUTY DIRECTOR DESROCHES: To do a feasibility assessment, yes.

COUNCIL MEMBER ESPINAL: Okay, okay. So, I became really interested in this issue when I heard about private companies that were actually helping homeowners in areas like in Park Slope produce energy and then also be able to see that energy using the conventional grid that's currently in place. Is—has there been any conversation or thought given by the

administration about how we can help continue to promote this sort of work being done privately?

DEPUTY DIRECTOR DESROCHES: Absolutely. So, community solar is something that the city is—is quite focused on. We have a program called the Solarize Campaign, and we're always looking for more districts that are interested in Solarize. I believe Reactive is in the—is going to testify, and they are a Solarize participant, and what that comes with is $20,000 to help a local CBO do the outreach necessary to get people subscribed and to really move that community solar piece forward on private residents.

COUNCIL MEMBER ESPINAL: I—I just see it as a great—a great way to continue to green the city making sure that we're producing cleaner energy not relying on the—on the conventional power plant that's upstate somewhere--

DEPUTY DIRECTOR DESROCHES: Absolutely,

COUNCIL MEMBER ESPINAL: --and being able to again green our city and—and go for that goal.

DEPUTY DIRECTOR DESROCHES: Yes, we share those goals.

COUNCIL MEMBER ESPINAL: Okay. [pause]

CHAIRPERSON CONSTANTINIDES: Thank you for your testimony today, and—and I guess—I mean I think we have a shared goal, right? I mean I—as someone that has power plants, peaker plants in my district that provide 55% of the city's power, I'm very concerned and find ways to get off the grid, and—and find ways that we can do more renewables. I think we share that goal of seeing those plants utilized less and less. There's—because of all the pollution that comes along with them. So, I look forward to working you and with our chair of our Consumer Affairs Committee, Council Member Espinal to see how microgrids fit into that plan.

DEPUTY DIRECTOR DESROCHES: Great. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you. [background comment, pause] Alright, so Annel Hernandez, come forward from the New York City Environmental Justice Alliance; Carrie Dietrich from 350 Brooklyn; and Scott Kessler from Brooklyn Microgrid, and I want to-

CHAIRPERSON ESPINAL: I recognize that we have Vinny Gentile from Brooklyn who is a member of

the Consumer Affairs Committee. He's a member of your committee as well. [pause]

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

PANEL MEMBERS: [off mic] [pause]

CHAIRPERSON CONSTANTINIDES: Alright, go ahead.

ANNEL HERNANDEZ: Okay. Good morning, Chairperson Espinal, Chairperson Costa and members of the City Council and, of course, our Committee Counsel Samara Swanston. My name is Annel Hernandez, and I am here to testify in support of evaluating the feasibility of microgrids across the five boroughs on behalf of the New York City Environmental Justice Alliance. Founded in 1991, NYCEJA is a non-profit membership network linking grassroots organizations from low-income neighborhoods and communities of color in their struggle for environmental justice. NYCEJA empowers its member organizations to advocate for improved environmental conditions and against inequitable environmental burdens. Through our effort, member organization coalesce around specific

common issues that threaten their ability of low-income communities and communities of color to thrive, and coordinate campaigns designed to affect city and state policies including energy efficiency, renewable energy, resilient energy, energy storage technologies, microgrids and community owned energy projects that directly benefit these communities. Because a number NYCEJA member organizations come from communities overburdened by greenhouse gas emissions and co-pollutants from power plants, and dirty industries clustered in their neighborhoods, our organization is a key advocate of emissions reductions and renewable energy targets. Our New York City Climate Justice Agenda is a multi-year research and advocacy campaign to address the need for comprehensive community based approach to community resiliency. In 2017, we released a report—a report, which analyzed Mayor de Blasio's OneNYC plan and made several recommendations to strengthen the city's policies in Environmental Justice communities. We highlighted that in addition to its promising economic potential. Microgrids and Solar Plus Storage technologies have—can have expensive environmental and health benefits particularly for

vulnerable communities who have been historically exposed to noxious pollutants generated from traditional fossil fuel energy infrastructure. Resilient energy can provide power during emergency blackout periods, peak demand especially to vital facilities such as emergency shelters, hospitals, public housing, public schools and in particular the Hunts Point Food Distribution Center. And while the Hunts Point Food Distribution Center has received funding via the Hunts Point Resiliency Process, the process has been slow, and it utilizes fossil fuel infrastructure that the community has major concerns about. This technology: Wind, Solar Storage also has the potential to displace inefficient and dirty peaking power plants, thus significantly reducing air pollution on Environmental Justice communities. The city should study, prioritize and streamline the deployment of microgrids and resilient energy system—systems in the coming years. The city—the city should also study progress made to date and strategies to reduce barriers for microgrid development including technical, policy and regulatory barriers. We recommend that any microgrid cost benefit analysis include economic, social,

environment and resiliency benefits. In pursuit of a just transition, New York City should be leading the nation in the procurement of renewable energy and energy storage technologies that meet the ambitious emission reduction and resiliency targets that we've set for ourselves. NYCEJA commends the City Council for holding a hearing on the feasibility of microgrids and creating an opportunity for public comment on this important strategy to increase community resiliency. We urge the City Council to hold a hearing early next year on Intro 1567, address energy policy essential to NYCEJA's work and we look forward to continue—to continued collaboration with the city to mitigate the threats of climate change. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you.

CARRIE DIETRICH: [off mic] Good afternoon.

CHAIRPERSON CONSTANTINIDES: Turn your mic on.

CARRIE DIETRICH: [on mic] Okay, can you hear me?

CHAIRPERSON CONSTANTINIDES: We hear you.

CARRIE DIETRICH: Good. Good afternoon. My name is Carrie Dietrich. I am a member and volunteer with 350 Brooklyn, which is a local Chapter of the International Organization 350.org. 350 Brooklyn is dedicated to fighting the global threat of climate change on the local level. When we talk about fighting climate changes, we are talking about ways to reduce greenhouse gas emissions as well as ways to build a more resilient New York City in the face of a warming world in which increasing intense storms are likely. Microgrids help us accomplish those base objectives. Like many residents of New York City, I lost power during Hurricane Sandy. At the time, I lived in the Brooklyn neighborhood of Red Hook, which was in the flood zone. Nothing of mine was lost due to flooding, but in Sandy's aftermath, my neighborhood went some few weeks, 3-1/2 weeks without power before it was restored. In my regular daily life--I was a graduate student at the time--was entire disrupted. I slept on friend's couches sometimes and at other times in my cold dark apartment. I lived out of a bag and grabbed showers where I could. After my school work, my daily priority became about finding where I could recharge

devices so that I could stay connected to loved ones and the outside world. There was an extended period of disruption and displacement for myself and many others that can be completely avoided in the future. One clear way to achieve this is by investing in microgrids, as we've discussed. A microgrid is designed to be agile an autonomous operating fully while allowing for a temporary disconnection to the broad—broader power infrastructure and being finally to alternative sources of power. This flexibility not only enables the city to be resilient in the case of another natural disaster, but it also encourages the use of clean and currently available sources of energy like solar, geothermal and wind. According to environmentalists and entrepreneur Paul Hawking in his book *Draw Down*, grid flexibility is one of the best ways we have to reverse global warming. Rather than being dependent on coal fired and gas fired plants hundreds of miles away, with microgrids homes and communities can rely on solar panels on their roof and batteries in their basement by still being connected to the rest of the grid. Incorporating microgrids is key to ensuring that the desired flexibility is attained without risking consistency,

and sustainability. While New York engages in setting up microgrids, it is essential that we incentivize people and companies to seek our renewable energy. One of the best ways to ensure this is to all homeowners and building owners to sell back their excess energy from the top solar panels to the grid. That way they can get paid for the energy they generate as the Solarize program was mentioned. In short, microgrids can help us both prepare for and prevent the threat of climate change. Renewable sources are by their very nature distributed and resilient. [door bangs] Thus, renewable energy must become a main staple of microgrids with solar or geothermal and wind being major components. By New York investing intelligently in microgrids is one major step close to being an advance city making lives better for its citizens. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you. Next up.

SCOTT KESSLER: Hi. (coughs) Chairman Espinal and Chairman Constantinides and members of the Committee on Consumer Affairs and members of the Committee Environmental Protection, thank you for the opportunity to provide testimony for this hearing on

the feasibility of microgrids. My name is Scott Kessler, and I serve as the Director of Business Development for LO3 Energy and Brooklyn Microgrid, a community microgrid project that I will discuss in a little bit. LO3 Energy is a young company with deep roots in energy, finance and technology. We're passionate about the future of the increasingly flexible responsive and reliable utility grid. We are developing ways to give people and utilities opportunities to shape that future. The Community energy microgrids that we are building enable utilities in neighborhoods to share in the responsibilities and benefits of reliable distributed energy resources. You may be familiar with concept of the Internet of things, the idea that our devices, machines, thermostats, automobiles and appliances are able to use built-in sensors and computing power to communicate information, coordinate with each other and manage our environment and our energy use intelligently and independently by following rules that their owners program into them. Our technology platform activates this Internet of things within the local power grid enabling PV panels, batteries, and nest (sic) thermostats to generate market signals

that will govern and balance neighborhood loads, generation and storage access and allowing them to coordinate with the broader interconnected transmission grid. Our platform enables this functionality by implementing a market in which neighbors, independent power producers, energy service companies, and utilities can choose to buy and sell energy and energy services on a peer-to-peer basis in real time. For example, a neighborhood resident may run his washing machine when electricity in the local peer-to-peer market is the least expensive. Perhaps when energy output form his neighbor's solar panel reaches its peak in the afternoon, or a department store may dial back its air condition when that local electricity is most expensive. For example, when a local utility transformer is being overtaxed in the late afternoon on a hot summer day. Currently, LO3 Energy is developing such a marketplace within the Park Slope, Gowanus and Boerum Hill Communities of Brooklyn through a benefit corporation called Brooklyn Microgrid. The goal of this project is to enable the multi-participant marketplace for consumer choice that is envisioned by energy regulators in New York,

and likewise to improve the local community's energy security during extreme weather events and other emergencies. Said more simply, neighbors can buy and sell energy usually produced from a rooftop solar PV system with one another. The Brooklyn microgrid can be thought of as a virtual microgrid. Many distributed but digitally connected energy resources that are able to provide the same benefits of the commonest and network as a physical microgrid namely generation, storage, demand for cathometer and ancillary services, and is in the design phases to add physical resiliency. This community based microgrid in Brooklyn, which can be replicated in hundreds more communities around the U.S. and globally, will create a decentralized peer-to-peer energy network that also coordinates with the broader power grid. By sending appropriate price signals for energy and energy services, these locally optimized networks engage all market participants to deploy distributed energy resources and infrastructure upgrades in the most efficient manner. These local energy resources also provide resiliency for emergencies, reduce customer costs, optimize utility infrastructure investments and enable renewable

electricity, energy efficiency and energy storage deployments within that community. Meanwhile, the new market drives community investment in jobs boosting the local economy. This is a new opportunity for communities who until now have been dependent on the grid's central planners and unable to directly participate and control or contribute to the reliability or source of the electricity on the grid. Projects like Brooklyn Micogrid and distributed energy marketplaces enabled by the Internet of things more broadly will enable consumers and communities to truly determine their energy future, their source of energy, when they want to use that energy and the price that they pay for that energy. Community microgrids represent novel approaches to the ideas of non-wires alternatives, exemplified by the Brooklyn-Queens Demand Management Project in Brooklyn. But rather than one organization doing procurements on behalf of local citizens, community microgrids also offer the opportunity for communities to express a preference for certain types of energy through their selection of where they get their electricity from. Local residents can be further employed through the

opportunity to own a portion of the community microgrid either through investment in the organization directly or through a micro investment in the community's solar project or other energy asset. The role of public policy is key to enabling community energy marketplaces and community microgrids. Local policy makers can streamline the creation of these organizations through structures such as Community Choice Aggregation, which facilitates the participation of an entire community as one. Additionally, local policy makers can work with energy regulators such as the New York Department of Public Service and Public Service Commission [bell] to ease requirements for community energy marketplaces. Specifically, for one neighbor to transact energy supply with another, an energy retailer must take title to that energy in the interim. This requirement should be revised to enable direct transactions without unnecessary intermediaries. I will just skip ahead. So, in summery, we think that community microgrids will be critical to enabling consumers to participate and benefit from community based energy resources both under normal operations and in emergencies. We see

this as a win for the consumer, a win for utility and a win for the grid. We are grateful that these committees are discussing these important issues, and we look forward to serving as a resource as you continue these conversations. Thank you for the opportunity to deliver this testimony.

CHAIRPERSON CONSTANTINIDES: Thank you all for giving testimony. Before you go, I have—I have a few questions. [background comment]

SCOTT KESSLER: Yeah.

CHAIRPERSON CONSTANTINIDES: Yeah, so I mean, what has the biggest impediment that you feel there is out there to seeing more interest in microgrids on—on to neighborhood by neighborhood level?

SCOTT KESSLER: I would volunteer that it's probably existing energy regulation. You know, most of the rules on the book are structured so that you either have to be a utility, a power producer or a retailer in order to be able to transact in any way over the public grid, and now it really prevents some of these smaller participants from getting more engaged because their options are fairly limited to how they can get involved.

ANNEL HERNANDEZ: Yes. I think there are a lot of barriers, but two in particular are what the definition of resiliency is. So, right now in Hunts Point, we're part of this Hunts Point Resiliency Project to develop a back-up energy and potentially a microgrid in the future, and in order to have resiliency, you need three days of backup power, and it's difficult for renewable energy and energy storage to provide that. So, a big portion of that investment has gone to fossil fuel infrastructure, which is really concerning. So, I want to make sure that the microgrids that we're investing in are renewable energy microgrids, and then energy storage, of course, but technology continues to change very rapidly, and there's a lot of, you know, fire code or other regulatory barriers, physical barriers that don't allow for the placement of that in the crucial facilities that need it the most.

CHAIRPERSON CONSTANTINIDES: As far as energy sources are those—are those out there that you looked at as opportunities for us to grow in the city, the particular ones that you think we could capitalize on and—and created more microgrids utilizing?

ANNEL HERNANDEZ: I mean definitely solar plus storage technologies.

CHAIRPERSON CONSTANTINIDES: Solar plus storage.

SCOTT KESSLER: I would agree with that. I mean I'm also—I would say—I would also say that in the right circumstances combined heat and power is going to be a very important part of future microgrids. You know, right now it's sort of a little bit—microgrids are too reliant on that resource, but for certain situation they may make sense as a more efficient means in the public grid as a whole.

CHAIRPERSON CONSTANTINIDES: Yeah, and with that I'll turn it over to my Co-Chair, Council Member Espinal.

CHAIRPERSON ESPINAL: So, for Brooklyn Micogrid so you—you mentioned that the—you—Brooklyn Microgrid is a virtual microgrid, correct?

SCOTT KESSLER: Right now there is no ability to disconnect from the larger grid, which is why I call it a virtual microgrid. We are planning that physical disconnect, but that takes a lot more years than actually getting the trading up and going.

CHAIRPERSON ESPINAL: Right, so if—if—if the main power plant is down, do you—would people who have solar panels on their rooftops and connected to the conventional grid able to create or supply energy to their neighbors?

SCOTT KESSLER: So, without that physical disconnect no. Based on, you know, a lot of the rules Con Edison has to prevent sort of backflow onto system. Right now, actually most owners with solar panels still become de-energized with the rest of the grid when we lose power.

CHAIRPERSON ESPINAL: Uh-hm. I think Costa probably asked us earlier, but again I'll ask again. Is there anything you feel that the city is not doing that they should be doing in order to—to help to expand these programs and expand the possibilities of creating microgrids in the city'? So, I now the state—there's some issues in the state, right?

SCOTT KESSLER: Yes, mostly energy policy issues you're referring to are either set by the Department of Public Service or the New York Independent System Operator. I would say that, you know, small projects like us there's always ways to

find support, but, you know, most of the issues we run into tend to be at the state level.

CHAIRPERSON ESPINAL: Okay.

ANNEL HERNANDEZ: Yeah. There—there's always a lot more that we can do. I think the funding needs to be there to do these large projects, but I—I will commend the city for committing to exploring the storage technologies on all of their public buildings that are in a storm surge zone—there—the other like public solar program. So, I would say that that's definitely a step in the right direction.

CHAIRPERSON ESPINAL: Uh-hm, and for the Hunts Point project that you mentioned earlier, do you know what—what sort of fossil fuels they're looking to—or how they're using or how does it aim to generate fossil fuels to--

ANNEL HERNANDEZ: [interposing] Yeah, they're using—

CHAIRPERSON ESPINAL: --on the microgrid there?

ANNEL HERNANDEZ: Well, they're using some solar and storage on two public schools. They are using a natural gas turbine, and then they're

using like diesel back-up generators, and this is for both the industrial and—and residential part of Hunts Point, and that, you know, I mean folks may know but Hunts Point Food Distribution Center is where the majority of the region's food comes from. So, that's why it's such an important resiliency project. Not just for the South Bronx, but for the city as a whole.

CHAIRPERSON ESPINAL: Okay, thanks.

CHAIRPERSON CONSTANTINIDES: Thank you all for your testimony. We appreciate it and our next panel is David Smith from Burns Engineering, and Daniel Carpen, Professional Engineer. [background comment] David Smith, are you here. Hi. So, Mr. Carpen, we'll put you on the clock, and have you go from there, and we'll have our Plus panel after you.

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

DANIEL CARPEN: [off mic] Yes, I do. My name is Daniel Carpen. [background comment] [on mic] My name is Daniel Carpen. I'm a professional engineer. I reside at 3 Harbor Hill Drive,

Huntington, New York. I listened to the earlier testimony, and it's very comprehensive. They described some of the problems and, and promises for microgrids, and basically, I support everything that everyone had to say earlier, and I have very little additional to comment at this point. Thank you.

CHAIRPERSON CONSTANTINIDES: Thank you. Thank you, Mr. Carpen for your testimony. We appreciate it. Thank you. The last panel I'd like to call forth Cecil Corbin-Mark from We Act for Environmental Justice. [background comment, pause] Cecil, it's good to see you, my friend.

CECIL CORBIN-MARK: The same here. The same here.

CHAIRPERSON CONSTANTINIDES: And I'm have Samara Swear you in.

LEGAL COUNSEL: Yeah, can you please—

CECIL CORBIN-MARK: It's okay. [laughter] I still love you so--

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

CECIL CORBIN-MARK: I do. [background comment, pause]

CHAIRPERSON CONSTANTINIDES: Alright, Cecil, go ahead.

CECIL CORBIN-MARK: Okay. Good afternoon, Mr. Chair and members of the committee. I want to thank you for the opportunity to testify before you. We Act for Environmental Justice [coughs] is a Northern Manhattan based community environmental justice organization. We are also a membership organization, and for the past three years, we've been working on developing a community climate resiliency plan known as the Northern Manhattan Climate Action Plan. That plan grew out of a series of planning community meetings around the question that was posed to community residents around the idea of developing what they needed for resilience. Out of that process, one of the most striking things to come forth in the planning process was the community's desire to have more control over their electric grid, and as a result of that community planning process we act in partnership with our members and residents of Northern Manhattan, more than 400 of whom participated in those planning

meetings back in 2014, developed an energy democracy focus for Northern Manhattan Climate Action. I think it's no surprise to anyone that communities have high expectations about electrical reliability especially in the wake of Super Storm Sandy and its impact that it had on many vulnerable communities across the city. That reliability expectation is targeted most often at the utility providers. Virtually everything that people have to do depends on electricity from preparing meals to banking to healthcare, et cetera. Electricity is not a luxury. It's a critical human right, and this places a high premium on the reliability. Through out planning process, we've learned about our electrical system, but we've also discovered that we have to take matters into our own hands in our community. So, what are we doing at this particular point towards the idea of creating greater resilience in Northern Manhattan as well as taking more charge of the electrical system? No pun intended. We have started to build out a community process where we've aggregated affordable housing in Northern Manhattan, and in relationship with Solal One, and several other affordable housing operators in Northern Manhattan, we have targeted affordable

housing that is either mission driven and owned and operated by organizations that are mission driven or affordable housing that is owned by residents in Northern Manhattan. Why do we target that? We targeted those particular housing—types of housing because (coughs) we understood from our community that—that- Sorry. We understood from our community that a key concern was the growing creep of gentrification in Northern Manhattan, and we also through our learning together understood that energy was probably the second biggest cost that some of our residents have to bear after paying rent or a mortgage. We are also concerned that lowering the energy burden in Northern Manhattan is something that would help not only save resources for our community, but could potentially be one of the keys to slowing the significant creep of gentrification in Northern Manhattan. And so, we've aggregated affordable housing buildings, as I described before, into a pool, and we put out an RFP for a solar installer. I'm happy to report that with the community's participation we selected a solar installer Quixotic, and we are now working with them to install solar panels on affordable housing, as I mentioned before

in Northern Manhattan. Before I go too much further, I also want to point that we're not just focused on affordable housing, but we're also concerned with public housing in the city of New York. Something that unfortunately we no longer seem to be investing in and building in, although I do need to commend the Mayor for putting some money towards making sure that there is greater sustainability in public housing. That said, there are some public housing units in Northern Manhattan that do not receive their power from NYPA, and we are targeting those that receive their power from Con-Ed, and we're looking to put solar and solar storage on those particular facilities as well. And so, with that holistic approach to affordable and public housing in Northern Manhattan, we are going forth with the idea of starting by putting solar and solar storage in as many particular facilities as we can, and we're looking forward to the city's commitment of putting 100% renewable on co-located, what we deem to be co-located municipal facilities. So, in other words, we're targeting where we choose to put solar and we're then looking for what are the co-located particular public facilities that are owned by the

city where there should be at some point in the future 100% renewable. We're being that deliberate because the end result for us is to satisfy a claim that came forth from our community that said they wanted to be able to control their electricity. They did not want to be the ones who watched as Wall Street lights were turned on well before the rest of city's lights were turned on. They did not want that to happen again in Northern Manhattan or anywhere else for that matter that was a low-income community or community of color, and so we're being deliberate in terms of aggregating not only affordable housing, not only placing them next to, or not placing them, but obviously co-locating next to municipal facilities that are going to be 100% renewable because for us we see that as the start of building a community microgrid. Ultimately, we intend to figure out how we jump over all of the state hurdles and city hurdles to get us connected in a place in Northern Manhattan where we can rely upon our own selves to turn back our power whenever a climactic crisis hits. So, I know that from our research together as a community that microgrid seems to be something that doesn't have a clear definition or it

has multiple definitions all across the board, and so I want to offer a community microgrid from our perspective is Northern Manhattan is a coordinated grid area served by one or multiple distribution systems, and supported by really high penetrations of local renewable energy, and other types of distributed energy resources such as demand management, and storage, which is really critical. We think that this is a pathway to securing the climate resilience of our communities, and we are steadfastly working on that path at this particular point. One of the other key things that I wanted to emphasize in our approach to building our own microgrid in Northern Manhattan as we talked about public housing. We talked about affordable housing of different types. I also talked about municipally owned buildings. We are also targeting other institutions and entities in Northern Manhattan. So, whether they are universities. We are currently in discussions with Yeshiva University in Washington Heights, and they have committed to coming on board with our installer and installing solar, and we're about to tackle and target our big behemoth Colombia University, and we will then move onto City

University of New York, which has multiple campuses in Northern Manhattan. We are looking for any and all partners to help build resiliency in Northern Manhattan by getting to the point where sometime in the future we will actually establish our own microgrid. We believe that that microgrid should have high penetration of local renewals, distributed energy resources. It should engage with energy efficiency, and help the local users connect so they are maximizing that. It should include a scalable solution to help us continue to grow as Northern Manhattan, and we believe that in doing so we will create certain types of benefits such more renewable energy in a low-income community, a people of color community, a frontline vulnerable community. We believe that we will also help to make sure that there's greater access and more control over that local power so that in the event of the next climactic disaster, that we will be able to restore some services. Maybe not all, but some services to our communities. We believe that this is a pathway to reducing some of the public health burden that comes forward as we take more fossil fuel generated electricity out of the grid. We believe that we will

be able to also improve the quality of the air and secure the residents of Northern Manhattan in that way as well. Lastly, one of the things that we also believe that taking this path of building a local microgrid can help ensure is local work for local residents. We have made it a clear mandate of The RFP that we have put forth to the solar installers that they must hire from the training programs where we have trained local workers, and while we're still working out all of the kinks, we expect to get started in the spring with hiring some local people for the solar installation that we're actually engaged in, and we believe that if this scalable solution is presented, we can then do more of that to move forward. I presented you with all, or at least I've left copies of the Northern Manhattan Climate Action Plan for you. It outlines several other key pillars of our Northern Manhattan Climate Action Plan, but the Energy Democracy piece is the one that I had focused on most directly here. With that, I will stop and take any questions that you might have.

CHAIRPERSON CONSTANTINIDES: So, first thank you for your testimony. I have been to your training program. I have spoken to some of the men

and women that you're working with, and glad to hear that as part of the RFP that we're going to be able to see that that work come to fruition for them, for their families and being able to build a strong future. So, what do you think are the biggest obstacles are going to be from your plan to talk about the—the regulatory hurdles? Where? What—what type of hurdles do you expect to sort of run into, or have run into so far that have made it more difficult for you to do this?

CECIL CORBIN-MARK: On the regulatory side, I do believe and I have a tremendous amount of respect for the folks, men and women at the FDNY given the fact that we just recently in my neighborhood had a huge like I don't even know how many alarm fire that, you know, left a number of people sadly at this point in time without a home to go to. But, I do know that there are lots of challenges with regards to even the installation of the solar panels, and solar storage that we have to figure out a way to both satisfy what the women and men of the FDNY need to do their jobs effectively, but allow us to continue to move forth on the path to making sure that certain communities have a clear

path to renewables and a clear path the kind of resiliency that that solution offers. Second, I think that there is also—there's a challenge that comes forth with moving forward to creating microgrids all over the place. Because if this isn't done in a controlled manner and if it isn't done with an eye towards how are we going to take care of those who are yet able to sort of migrate off the grid to some sort of microgrid solution. We could end up in a situation where—and—and this is happening now, where the wealthiest of New Yorkers are able to migrate off of the grid and have their own kind of resiliency, and then those of us who are in lower income communities and communities of color or moderate income communities are left stuck with sort of footing the bill for a grid that is more than a century old on which our electrical system is build. That's a clearly unacceptable outcome for us as a community or series of communities seeking to access renewable power and storage and to develop some sort of control over our systems that provide electricity in our communities especially when we have watched the—the Con-Eds and, you know, other power providers in the city prioritize turning on the lights on Wall

Street before they do, you know, Amsterdam Avenue. So, those are two regulatory hurdles. I do think that Con Edison represents a bit of a conundrum in terms of working with communities. I don't think they've quite gotten that memo just yet, and-and whatever we can do sort of regulatorially bring them to bear. I know this represents somewhat of a threat to the model of how they do business, but whatever we can do to make them understand that this is a system that has to transform, we've got to do some of that. I don't know exactly what that it, but give me time. I'll try to figure it out.

CHAIRPERSON CONSTANTINIDES: Got you. No, I mean so prior to you coming, we had heard from the administration and they had talked about how they were building a microgrid around the Red Hook Houses, which were severely impacted by Sandy--

CECIL CORBIN-MARK: Uh-hm.

CHAIRPERSON CONSTANTINIDES: --and I commented on how we should, and I think there was mutual agreement with the administration on seeking to look at all residents of public housing especially in areas that were impacted, and how do we—how do we create microgrids to ensure that those residents are

not going to lose power or-or have that—that loss minimized--

CECIL CORBIN-MARK: Uh-hm.

CHAIRPERSON CONSTANTINIDES: --during events like Sandy there.

CECIL CORBIN-MARK: I mean I think that that's—so, you know, the kudos to the administration for taking those steps. I'm impatient and so I feel like everything should be done yesterday, but I recognize that's not completely realistic. I think there is, if I can sort of, you know, pound the table for Northern Manhattan for a second, there are only two public housing facilities in which the folks at NYCHA have disclosed in partnership with the city that they want to put solar on top of. I think it's really important that we think of solar and solar storage, that we think about microgrids in a way that is sort of the truest compliment in the way that I described them, which has both the distributed energies, resources, the generation capacity, but storage capacity, and that is connecting and thinking not only about sort of islanding NYCHA campuses, but how do we connect those NYCHA campuses to what else is around it so that we become more of a cohesive

community. My organization in partnership with the Columbia Mailman School of Public Health did some research around Sandy impacted public housing developments out in the Rockaways and Coney Island and so forth, and one of the findings coming out of that research was that communities that actually fared better—fared better in many instances because-- communities in public housing fared better because they were actually more social cohered that they were coming together. The residents actually worked together, and that I think is a concept that we need to take away and we need to recognize that NYCHA campuses shouldn't be islanded onto themselves. Obviously the term 'islanding' means something within this context, but I also mean in terms of how we knit the system together. How do we created a more resilient system? And so, I would encourage them to, you know, figure out how to move faster, and quicker with some of that stuff, but to also think about not just being myopic and thinking about, you know, oh, those are the NYCHA residents over there. Well, that kind of thinking got us into a lot of trouble. It reminds me of Robert Moses like put them by the river or behind the rail tracks, as my grandmother used to

say. We've got to stop thinking like that. If resilience is going to be something that we focus on in the city, and talking about people resilience, then we also need to build communities, connect them in a way that makes them understand that they are connected, about creating power for each other, both figuratively and literally, right? That can't be just like, oh, those NYCHA campuses over there.

CHAIRPERSON CONSTANTINIDES: Yeah, I—I hear you. I agree with you and I'm impatient myself. So, [laughs]

CECIL CORBIN-MARK: I noticed.

CHAIRPERSON CONSTANTINIDES: Yeah, so we—we sort of have that in agreement. So, I think that how do we—are there particular. We talked about solar and various storage. We talked about, you know, co-generation. Are there other opportunities that you see for microgrid power that's out there that maybe we're not tapping into?

CECIL CORBIN-MARK: I mean I think that the co-generation piece is an important one, and obviously we're not going to be, you know, 100% renewable tomorrow, and really thinking about what that transition looks like. So, I pointed out that

in Northern Manhattan through out Northern Manhattan Climate Action Plan, we are actually really targeting campuses and those facilities and really bringing them into a conversation as to what are you doing with all of the excess power that you have on your facilities. There are college campuses all across this city, and I could see that being a scalable model that moves forward into the future, but that has to come with clear commitments to, you know, if there's any kind of municipal support or state support or, you know, some day in the future, 2020, when there is more federal support, you—you will then I think have to mandate that that support is tied to contractually in some way making sure that there's a transition from fossil fuels to clean and renewable energy. And so, I think those represent opportunities. There are also private hospitals in Northern Manhattan, and we're, you know, we—we have them on our list. They're a little bit further down. We've—we've had some interaction with the campuses before especially Columbia where we negotiated community benefits agreement and as part of—as one of the lead negotiators in that negotiation, I was trying at that point in time to negotiate lower fuel

prices for affordable housing by actually trying to, you know, edge in on Columbia's bulk purchasing capability. We got a little project going, but Columbia has stood in the way of that moving forward all the time. That's my interpretation and my organization's interpretation, but those kinds of opportunities I think exist on, you know, hospitals and private hospitals, college campuses, et cetera, because they are using often more capacity than they—more of the electricity—they're not using as much of the electricity as they're generating. Sorry.

CHAIRPERSON CONSTANTINIDES: So, with that, I'm going—I'm going o turn it over at this time to my colleague Donovan Richards.

COUNCIL MEMBER RICHARDS: It such an honor to see you. Thank you, Mr. Chair. Thank you, Chairs for holding this committee, and so it's good to see old friends right back here. [laughter] So, I wanted to ask you do you believe the city is maximizing with an $85 billion budget incentives to really move their conversation to—move the city towards 100% renewable, and—and I'm interested in knowing, you know, if this money was available, what

are the things you would, you know, if you had your way--

CECIL CORBIN-MARK: [interposing] If I had my way?

COUNCIL MEMBER RICHARDS: --what sort of technologies you—you would really push the city, but I'm just interested in knowing do you feel the city is maximizing opportunities, and then there's also this—always this conflict between and it's something we hear often is even when we talk about multi-family units right--

CECIL CORBIN-MARK: Uh-hm.

COUNCIL MEMBER RICHARDS: --putting solar on a roof. Like will those costs be passed down to residents?

CECIL CORBIN-MARK: Uh-hm.

COUNCIL MEMBER RICHARDS: So, I'm just interested in hearing you're your opinion on how we would strike that balance and not pass down costs onto tenants and make their way for the city to play a role in this area via whether it's a zoning action or something of that nature.

CECIL CORBIN-MARK: So, I'll take the last part first, and then migrate backwards. I think

that the issue of how do we protect tenants. We were—when in a previous administration when three was talk of getting a clean heat initiative together, I think we were very deeply embedded in sort of the development of that as part of the Sustainability Advisory Team and then the smaller work groups that they have, and one of the things that we constantly pushed for was to make sure that if we go forth with some of these very necessary modifications and improvements to the heating system, the benefits of which are very clear, you know, you—cleaner heat, fewer greenhouse gas emissions, but also more critically to some of our members in Northern Manhattan, you have the public health benefits of less particulate matter getting out into the chimneys and, you know, circulating into the walls and-and of apartments. That was clear, but one of the challenges of doing that was exactly as you pointed out, Council Member Richards. The idea that landlords, private landlords would then turn around and say well, look, you're forcing me to make these kinds of improvements notwithstanding the fact that I'm improving the value of my property, I still need to pass those onto tenants, and I will seek any means

to do that, and then they'll lead the way that they always do them, the MCI Program, Major Capital Improvement Program, operated by the state. I think that the—the—the city—the city—the Mayor's Office has recently put forth a package of proposals for improvements, and while I have my, you know, concerns about that particular program, I'm not going to comment on that at this particular moment. I do want to say that the idea that they're thinking about with regards to establishing or—or, you know, accelerating a Pace Program, which has worked more successfully on commercial properties than it has a residential properties, but—and I will say that, you know, there's nothing like New York City, right? I mean we all know that. We're—we're unique and very special, but for them to come up with a program that knows that and to work with the Council to actually get something like that up and running is important, but it really does need a lot of funding behind it if we're really going to deal with the challenges of making sure that those kinds of things don't happen to residents in privately held landlord buildings. That said, the—the rest of the work is really at the state level to get the state to recognize that these

particular improvements are critical to other broader plans that the city and state have, and that they need to recognize that we need to hold particularly low and moderate income tenants safe in an effort to make sure that while we provide the kinds of sustainability measures that move us forward as a city, as a state, as a country, we can't be doing that on the backs of—of allowing people to be kicked out of their homes that, you know, some instances they have lived for all their lives. And so, that has to be addressed. That balance has to be addressed and worked out amidst all of the political stuff that goes on between the city and the state, but it's a key thing, and we—there are hundreds of thousands of New Yorkers that need to be protected. So, the city—summing up, the city needs to put money behind something like a PACE Program, and that's really critical and important. Yes, it needs to be developed, and the Council needs to work with the Administration to make sure that all of that gets ironed out and worked out, but then there's a collective effort between the Mayor's Office and the Council to go to the state and make it clear that these are particularly challenging issues with

regards to low-income folks, and—and moderate income folks and we can't have people being kicked out because we're making improvements that both protect the sustainability and their health. The—the first part of your question around—tell me again. The opportunity you were saying. I lost it. I should have written it. I'm sorry.

COUNCIL MEMBER RICHARDS: I think it was the $85—the $85 million budget--

CECIL CORBIN-MARK: [interposing] Oh, with the budget.

COUNCIL MEMBER RICHARDS: --and do you feel the city--

CECIL CORBIN-MARK: [interposing] Is the city doing--

COUNCIL MEMBER RICHARDS: --would prioritize one area.

CECIL CORBIN-MARK: Yes.

COUNCIL MEMBER RICHARDS: I think you said the PACE Program, but are there any other things the city could be doing?

CECIL CORBIN-MARK: I will say that, you know, in terms of moving forward on 100% renewables, getting these contracts sort of moved, the only other

thing-- Well, there are lots of other things, but let me just confine it to this at this moment. One thing that I do think is really critical is making sure that as we move forth with 100% renewables, yes, that storage is factored in, and I'm not clear at this point that that's something that's a part of the thinking. So, I do think that's critical and that money should be devoted to making sure that it's not just getting the renewable energy in terms of the generation part on top of the roofs, but to make sure that there is storage tied into this as we see if we're going to really build sustainable microgrids, we do need storage especially if we're really trying to push towards 100% renewable. So, that would be one thing, which I haven't heard and that just might be me being buried in other things, but I would say that part. And then, I would say the other part that's really critical is really figuring out and tying this notion of those of us who work in the Environmental Justice Movement think about these things across a variety of spectrum, and it's tying this effort to get 100% renewable to the idea of creating jobs in our communities, and I know that there's a lot of work going on with regards to the,

you know, administration's part of Green Workforce. I was at meeting the other day with Dan Zarrilli, and certainly, that was a key thing that was being discussed and I—I think that's good, but we've got to tie these things together. They can't be happening in sort of like, you know, disparate quarters, and then like, oh, look up like you're putting solar panels on the roofs of—of the Polo Grounds, and the residents in the Polo Grounds (1) don't even know about it because nobody has come to talk to them about it, and (2) we're not sort of prepping those folks for jobs in that sector, right. And so, how do we make that happen whether it's on schools in our communities, whether it's on police stations or fire station or wherever it's happening in our community we need to tie those things together. And if I were mayor for a day, maybe that would be the challenge. I would work on tackling.

COUNCIL MEMBER RICHARDS: Uh-hm, yeah, a political future for you.

CECIL CORBIN-MARK: Yeah, no. I won't even try that.

COUNCIL MEMBER RICHARDS: And I will just add on the battery storage. It was amazing. I just

got back from Puerto Rico and the Speaker and a few of us visited Casa—I forgot the name of the place, but it was amazing. They had battery storage. So, while everything was out around them, they actually plow it up and that's where many of the residents came to get service--

CECIL CORBIN-MARK: [interposing] Yeah.

COUNCIL MEMBER RICHARDS: --because they were they were only place with electricity in town. My last question is something simple. I just want the city to hear it. I just like to ask this question all the time. There are some real simple things the city can do on energy efficiency, right?

CECIL CORBIN-MARK: [interposing] Uh-hm.

COUNCIL MEMBER RICHARDS: Like require big buildings to turn their lights off at night. Do you have any ideas on—on this? Do you support these big monstrosities of building and in the city commercial buildings who burn their lights 24 hours with no one in them? Do you have any ideas on—on that or do you think the city should review policy that in once sense preserve energy. Is that part of a strategy do you think?

CECIL CORBIN-MARK: It is. It is a certain part. It is certainly a part of the Northern Manhattan Climate Action Plan Strategy to pursue both energy efficiency. All of the buildings that we sign up so we have 16 buildings in the pipeline. Five of them have agreed to move forward. The other 11 of them have proposals that they are reviewing in—in the hopes that yes they will move forward. All of those buildings for us will then be given some energy efficiency audits, and—and really told. So, that these—you know, putting solar on your roof is just but one step, right. We're talking about creating resiliency. We're talking about creating energy democracy and independence. You know, some of the folks who came to our planning sessions were like I don't' want to pay Con-Ed no more. Well, you know, that [laughs] that might be a little--

COUNCIL MEMBER RICHARDS: [interposing] I wonder how Con-Ed feels about that?

CECIL CORBIN-MARK: I'm—I don't' know how Con-Ed feels about it, but that might be a little bit far in the future, if at all, yeah, but let's—let's get some of this energy efficiency stuff going. As far as commercial buildings like yes I agree with you

that they-they should be, but I am more focused in terms of our plan on the types of affordable housing that you talked about—that I talked about. Whether it's affordable housing that's owned by the residents who have come through a TIL program or—or NHC—HDFCs in—in—in Northern Manhattan or whether--

COUNCIL MEMBER RICHARDS: [interposing] You have to get Community Land Trust.

CECIL CORBIN-MARK: And Community Land Trust. Yes, absolutely and/or whether it's mission drive affordable housing.

COUNCIL MEMBER RICHARDS: Uh-hm.

CECIL CORBIN-MARK: I think we've got to start there because people are losing their homes and that to me more than sort of the commercial buildings—I support you on that for sure 100%--

COUNCIL MEMBER RICHARDS: Uh-hm.

CECIL CORBIN-MARK: --but I'm at 150 to 200% when it comes to starting with energy efficiency for people in my community and across the city. I don't want to--

COUNCIL MEMBER RICHARDS: Uh-hm, uh-hm.

CECIL CORBIN-MARK: I'm in Harlem, right, and, you know, I need a visa to come down here or go—

[laughter] or go to Brooklyn or wherever else, but Queens, you know.

COUNCIL MEMBER RICHARDS: You always have a passport to Queens.

CECIL CORBIN-MARK: Oh, well, thanks. [laughs] But yeah, I—I support or energy efficiency 100%. It's a part of our Northern Manhattan Climate Action Plan.

COUNCIL MEMBER RICHARDS: Uh-hm.

CECIL CORBIN-MARK: We've trained staff, and we're getting ready. As soon as, you know, we start working with these buildings, we're going to be putting—making that a part of it. We just got a NYSERDA grant to do community energy planning, and so that's going to be a key part of that as well. So, energy efficiency, yeah, definitely.

COUNCIL MEMBER RICHARDS: Alright, awesome. Thank you so much, Chair and Cecil, I will certainly return you call. I apologize for that.

CECIL CORBIN-MARK: [laughter] No worries.

COUNCIL MEMBER RICHARDS: I saw it this week and forgot. So, so--

CECIL CORBIN-MARK: [interposing] Much love.

COUNCIL MEMBER RICHARDS: --it's good to see you at a hearing to remind me. Thank you.

CHAIRPERSON CONSTANTINIDES: Alright, so you're always welcome in Queens, my friend, and good to see you. [laughter] Thank you for your testimony.

CECIL CORBIN-MARK: I get my Visa from you.

COUNCIL MEMBER RICHARDS: Alright, wit that, I want to thank the Administration and everyone who testified today, and really looking forward to working—[background comment]. So, alright, I want to thank, of course, my Co-Chair. I want to recognize Steve Levin who is from Brooklyn. He is with the Environmental Protection Committee as well. I thank our Co-Char Rafael Espinal, and everyone on the Consumer Affairs Committee for their good work, our own attorney, and great advocate Samara Swanston [applause] and Nadia Johnson our Policy Analyst. Our Financial Analyst Jonathan Seltzer, my own Legislative Director Nicholas Wizowski and—

CHAIRPERSON ESPINAL: [off mic] He's here. [applause]

CHAIRPERSON CONSTANTINIDES: Uh-hm.

CHAIRPERSON ESPINAL: And I think Maltisse (sp?). Sorry, Maltisse as well. Thank you for your great work and the sergeant-at-arms. With that, I wish everyone a happy Thanksgiving and this Committee hearing on Environmental Protection is adjourned. [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 November 30, 2017