

CITY COUNCIL  
CITY OF NEW YORK

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TRANSCRIPT OF THE MINUTES

Of the

COMMITTEE ON RECOVERY AND RESILIENCY

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April 26, 2016

Start: 1:12 P.m.

Recess: 3:50 p.m.

HELD AT: 250 Broadway- Committee Rm, 14<sup>th</sup> Fl.

B E F O R E: MARK TREYGER  
Chairperson

COUNCIL MEMBERS:

MARGARET S. CHIN  
DONOVAN J. RICHARD WEBSTERS  
CARLOS MENCHACA  
RORY I. LANCOUNCIL MEMBERAN  
ERIC A. ULRICH  
BILL PERKINS  
STEVEN MATTEO

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

Susanne DesRoches  
Deputy Director for Infrastructure Policy at the  
Mayor's Office of Recovery and Resiliency

Anthony Fiore  
Deputy Commissioner from the Department of  
Citywide Administrative Services

Patrick McHugh  
Vice President of Engineering and Planning at Con  
Edison

Richard Webster  
Legal Program Director of Riverkeeper

John Cervený  
New York Battery and Energy Storage Technology  
Consortium or NY-BEST

Kyle Kimball  
Con Edison

[gavel]

CHAIRPERSON TREYGER: Okay, good

afternoon. My name is Mark Treyger and I am the Chair of the Committee on Recovery and Resiliency. We are here today to discuss how the city maintains and enhances resilient electric power that can withstand the growing threat of rising tides and other natural disasters and, and challenges we, we face globally. When superstorm Sandy hit New York City over four years ago two million of, of our residents were without power for at least four days and up to two weeks. The storm flooded key substations leading to the explosion of an East village substation that had supplied power to a quarter million customers. Above ground, high winds, downed trees that knocked into overhead power lines. In the year since Sandy the office of long term planning and sustainability studied the feasibility of moving overhead electrical wires underground and it provided several... okay, great... several recommendations to enhance our city's electrical resiliency. Con Edison has invested one billion dollars into its storm hardening protection plan. This committee anticipates updates on the results of these measures and what if any

improvements can be made. Further, the committee is interested in learning more about the administration's plans to replace electrical power lost by the closing of the Indian Point Nuclear Power Facility. In 2015, the council advocated for the closing of the facilities to reactors for a good reason. Fears of a possible reactor meltdown, which has caused extreme devastation in cities that have experienced nuclear disasters have been justifiable in Indians Point day to day maintenance issues were disconcerting therefor this committee supports a transition away from that particular plant towards alternative clean sources of energy. We must also balance these issues with concerns that replacing nuclear power with carbon emissions may negate some of the city's environmental protection in resiliency efforts. In addition, we must ensure that vulnerable populations often those in high risk flood zones are not bearing the brunt of the city's resiliency efforts through unfair rate hikes and that includes communities that I represent in my district. After the immense damage to key electrical infrastructure super storm Sandy taught us major lessons. Today we want you to examine how the city has implemented

those lessons and not merely to assess how we have recovered from the storm but to look to the future to determine how the city can be even stronger in the face of pending natural disasters. Thank you to those who prepared for today's hearing including Anna Scaife, my Deputy Chief of staff; Committee Council Malaika Jabali, who by the way has been sworn into the New York State bar, congratulations Malaika, yes.

[applause]

CHAIRPERSON TREYGER: It's a big... it's a big, big, big huge news, huge and Senior Policy Analyst Bill Murray. I'd like to also acknowledge a special guest we have with us, Amani Jabali who is the mom of Malaika Jabali...

[applause]

CHAIRPERSON TREYGER: The committee looks forward to hearing testimony today from the Office of Recovery and Resiliency, the Departments of Citywide Administrative Services, Con Edison and environmental advocates and I also want to just note that we have been joined by Council Member Eric Ulrich who I believe... [cross-talk]

COUNCIL MEMBER ULRICH: I spent a lot of time at the bar too.

CHAIRPERSON TREYGER: Who I believe this is his first gold star in our committee, so congratulations Council Member and at this time I would like to call on the administration for the first panel and if you can just... we have their, their... everyone's name. just to confirm we have Susanne DesRoches... [cross-talk]

SUSANNE DESROCHES: DesRoches.

CHAIRPERSON TREYGER: DesRoches from ORR, is that correct?

SUSANNE DESROCHES: Uh-huh.

CHAIRPERSON TREYGER: Great. Miss... we have A. Fiore.

ANTHONY FIORE: Anthony Fiore.

CHAIRPERSON TREYGER: Anthony Fiore from DCAS, great and I'm not sure if I have one for... okay, great. You don't have... is it possible just to have something filled out for us and we'll get that information but if you can just please raise your right hands, do you affirm to tell the truth, the whole truth and nothing but the truth in your testimony before this committee and to respond honestly to Council Member questions?

[panel affirms]

CHAIRPERSON TREYGER: Wonderful, you may begin, thank you.

SUSANNE DESROCHES: Great. Good afternoon. My name is Susanne DesRoches and I am the Deputy Director for Infrastructure Policy at the Mayor's Office of Recovery and Resiliency. I want to thank Committee Chair Treyger, as well as the members of this committee, for this opportunity to discuss the progress the city has made in ensuring the resiliency of New York City's electric system. I am joined here today by my colleague, Anthony Fiore, Deputy Commissioner from the Department of Citywide Administrative Services, Iyad Kheirbek from the Department of Health. It is timely that we are together, in between Earth Day and the People's Climate March. Climate change poses a fundamental threat to our city due to the emissions of greenhouse gases that continue to cause the warming of our planet. The combustion of fossil fuels to produce electricity contributes more to climate change than emissions from any other sector. That is why New York City, despite federal cuts to climate change programs, is forging ahead. We are leading other cities by setting aggressive resiliency and

sustainability goals, while cutting greenhouse gas emissions 80 percent by 2050, 80 by 50. The path to 80 by 50 will lead to necessary energy upgrades... energy efficiency upgrades to our buildings and greater reliance on all forms of renewable energy and storage. If carefully designed, greater, greater reliance on distributed energy resources such as solar and reducing the electricity through efficiency, along with these changes... along with changes being made by Con Edison to the distribution system, will enhance the resiliency of critical energy infrastructure across the city, and particularly in neighborhoods that are vulnerable to outages caused by storm events. The electric grid is one of the most critical lifeline systems in our city. Almost 35 percent of New York State's total electricity production is consumed within New York City. Over eight million people and 250,000 businesses rely on the electric system to power our buildings, our hospitals, our transit systems, and our homes. When it fails, the cascading impacts inhibit our public transportation systems, our access to healthcare, and our economy as a whole. In short, our electric system supports almost all aspects of



our lives and livelihoods, and supports economic activity of global importance. New York City's power supply is generated primarily by natural gas and nuclear energy. In late 2017, the state announced plans to... plans to cease operations at the Indian Point Energy Center, Indian Point in 2021. Indian Point is an important supplier of carbon free power to the region and helps maintain diversity in the generation mix, which is important from a cost and reliability perspective. Its two units supply approximately a quarter of the electricity consumed in New York City. The administration is supportive of this facility's closure so long as the impacts are fully understood and a plan is in place to replace Indian Point's energy supply and maintain the safe and reliable operation of the electric system. The city is concerned that the acceleration... accelerated retirement of Indian Point will increase the use of older, in-city power plants, which emit air pollutants, that the replacement power will be fossil fuel based and that there may be an incremental cost for this power. Steps should be taken to minimize these potential impacts. For example, funds from the State's Clean Energy Fund could be used to defray

some of these costs of the... of the renewable replacement resources, thereby lessening the energy burden on our residents and businesses. In sum any replacement for Indian Point must be reliable, affordable, renewable, and resilient; and must not adversely affect air quality. On a related note, the city has been a strong advocate on expanding the transmission system in New York, and especially the transmission capacity from upstate to downstate to provide the city and its residents greater access to low cost power and generation diversity located upstate and in other regions. The city continues to advocate at all levels of government to ensure that the replacement of Indian Point meets these criteria and addresses the city's concerns. The city's plan to increase the resiliency of its electric and natural gas distribution system was laid out in OneNYC. Efforts have, have focused on hardening existing infrastructure to withstand climate events and recover quickly after such events. These efforts include reconfiguring utility networks, diversifying customer options in case of utility outages; reducing energy demand; and redesigning the regulatory framework to support resiliency. The city's electric

distribution system is owned and operated by Consolidated Edison Company of New York, Con Edison. Con Edison provides service to almost all of the city except for the Rockaway peninsula, which is served by PSEG-Long Island on behalf of the Long Island Power Authority or LIPA. Shortly after Hurricane Sandy in 2012, Con Edison filed a major rate case in which it proposed to spend one billion dollars on storm hardening and resiliency efforts. The Department of Public Service convened a storm hardening and resiliency collaborative during the rate case, to understand, discuss, and assess Con Edison's storm hardening plans. The city was an active participant in that collaborative and we drove the effort to change Con Edison's design standards to incorporate the prospective impact of climate change. Over the past four years, Con Edison completed almost all of its planned one billion dollars in storm hardening investments across its electric transmission and distribution systems, as well as natural gas distribution and steam generation and distribution. I can report today that Con Edison's infrastructure is more robust and resilient than it was before Sandy. With respect to LIPA, the city has continued to

advocate for the integration of storm hardening and resilience considerations into PSEG-Long Island's capital planning, system design and overall operation strategy... operational strategy. The city has pushed PSEG-Long Island and LIPA to implement storm hardening recommendations made in a Public... Department of Public Service 2013 audit and to consider how climate projections will impact their hardening strategies. In 2015, a voluntary storm hardening collaborative commenced. Going forward, the city has advocated for a more formal storm hardening process in order to ensure that PSEG-Long Island is taking the necessary actions to make its electric system more resilient to all climate change risks. Due to a strong urging... due to strong urging from the city, National Grid commenced a storm hardening collaborative in February 2017 as part of its 2016 rate case settlement. The collaborative is examining how climate projections and climate risks can be incorporated into its system design, planning and asset hardening investments and strategies in order to mitigate the risks of climate change to gas distribution infrastructure. The city continues to ensure the resiliency of its own assets and tomorrow

will announce the release of its preliminary Climate Resiliency Design Guidelines. Current building codes and standards incorporate historic weather data without accounting for a changing climate conditions. These new guidelines establish for the citywide guidance for architects, engineers and urban planners to incorporate projected changes in precipitation, sea level rise, and temperatures into the design of city facilities. Over the next months, the city will review and pilot the Guidelines and projects. The results will be used to refine the preliminary draft and a final version will be released in December 2017. The city's Climate Resiliency Design Guidelines were developed in partnership with city agencies and the New York City Panel on Climate Change to ensure the best available science is incorporated into a consistent methodology for designing resilient city buildings and infrastructure. We are confident this effort will result in enhanced standards that will make our built environment more resilient to extreme weather and climate change while promoting the health, safety, and prosperity of all New Yorkers. The city's OneNYC plan also outlines measures to expand the use of renewable resources. This includes

our commitment to support the deployment of one gigawatt of solar capacity citywide by 2030, enough to power more than 250,000 New York City homes. Last week, the city announced the first round of Solarize NYC campaigns in Harlem and Downtown Brooklyn.

Solarize NYC is a citywide program designed to increase access to solar power in New York City neighborhoods through community group purchasing campaigns. The city has also kicked off a project to provide solar power for 88 city owned buildings, including 66 New York City public schools. The agreement will result in over 100 public schools operating with solar power and tripling the size of the city's total solar portfolio to approximately 25 megawatts by 2019. To ensure this renewable energy is, is available consistently, the Mayor established the city's first ever energy storage deployment target of 100 megawatt hours by 2020. This target will help reduce reliance on the electric system by making variable sources of energy production such as solar arrays, usable over a longer time... period of time, time period each day. Energy storage also helps increase the city's resiliency by providing an alternate source of power at peak periods or if there

is a sudden loss of generation. We know that the waters near New York City have the potential to support large scale offshore wind power. The city continues to coordinate with state and federal government agencies to identify opportunities for the development of offshore wind in areas that have been designated off the coast of Long Island and New Jersey. The city views offshore wind as an increasingly viable solution to meet its energy needs and we expect the cost of offshore wind to come down considerably in the coming years. In order to reach our 80 by 50 goals the city will need to both... need both offshore wind and increased access to upstate renewables through additional investments in transmission however current costs and state level policies dictate the implementation timing of such technologies. The city continues to pursue opportunities to supply 100 percent of our electric needs from renewable resources and our power supplier, New York Power Authority will be releasing a request for proposals to solicit such opportunities imminently. The city also continues to advocate at the state and federal levels for changes to energy policies to help achieve the city's policy, policy

goals. For instance, the city has successfully advocated for changes to the State's Community Distributed Generation Program rules, reducing the minimum number of participants from ten to just two in an effort to avail more of New York City's building stock for solar installations. At the federal and regional level, we are involved in defending the Clean Power Plan, the Regional Greenhouse Gas Initiative, and solar investment tax credits all of which are crucial for driving down greenhouse gas emissions, promoting public health, and increasing our energy resiliency. The city's renewable energy goals are an important step in fostering a dynamic and inclusive economy and to develop a workforce pipeline for an industry with significant potential for new jobs. New York State is already home to more than 85,000 clean energy jobs. To help deliver on the city's 2.6-billion-dollar municipal building retrofit program and to achieve the significant reductions in greenhouse gas emissions we will need to see from building citywide, the Mayor... excuse me, Mayor de Blasio announced the New York City Green Jobs Corps as a partnership with the Building Construction Trades Council. With this



green job initiative, the administration is committed to training 3,000 workers with new skills needed for the emerging green economy over the next three years. And just last week on Earth Day, the Mayor announced an agreement to launch the first class of pre-apprenticeships available through New York City Green Job Corps. In conclusion, I would like to thank the committee for this opportunity to highlight some of the progress made to protect our system, which is dynamic and ever-evolving. As we face significant challenges due to a changing climate, we are more... far more prepared than ever to deal with weather related threats to our system. The de Blasio Administration remains committed to ensuring the sustainability and resiliency of our power for the benefit of all New Yorkers.

CHAIRPERSON TREYGER: Anyone else? I just want to note that we've also been joined by Council Member's Donovan Richards and Steven Matteo and I guess I will begin. So, I, I believe I heard in your testimony that the, the administration supports... just, just to clarify, you said the administration does support the closure of the Indian Point Power Facility, is that correct?

SUSANNE DESROCHES: Correct.

CHAIRPERSON TREYGER: Okay and can you just specify the rationale behind supporting the closure of Indian Point?

SUSANNE DESROCHES: Sure, so we understand the closure is related to safety concerns and the agents of the plant.

CHAIRPERSON TREYGER: Okay. A question that we have is that I think that you've mentioned in your testimony that it's the Indian point's two units supply approximately a quarter of the electricity consumed in New York City and I just have to ask is... you know what is the plan to make up for the amount of energy that we are going to lose from Indian Point, is there a plan and what is the plan?

SUSANNE DESROCHES: So, our understanding is that Indian Point produces about 21,050 megawatts so the current replacement plans and this is our understanding of those plans is that that replacement power will come through a transmission upgrade which is called transmission owner transmission solutions that is 376 megawatts and there are two new natural gas plants that are currently planned. One is actually already built,

that is the Competitive Power Venture Valley Energy Center or CPVV and the other one is called Cricket Valley so that is our current understanding. As I mentioned in the testimony we are concerned that part of the replacement power will also come from a potential increase of in-city generation.

CHAIRPERSON TREYGER: So just to clarify and we've been joined by Council Member Perkins but just to clarify these facilities are not yet operational, is that correct?

SUSANNE DESROCHES: Correct.

CHAIRPERSON TREYGER: And when are we anticipating the, the full closure of Indian Point?

SUSANNE DESROCHES: 2021.

ANTHONY FIORE: That's one unit in 2021 and the second unit in 2022.

CHAIRPERSON TREYGER: Right and so there is a serious potential or more than a potential for a gap between the closure of Indian Point and making up for the shortfall of this energy that we, we got from it, is that correct?

ANTHONY FIORE: There certainly could be and the state has plans to extend the, the operation

of Indian Point for another few years should that come to fruition.

CHAIRPERSON TREYGER: Is... I, I don't think we've received that information, is that... is that in a memo or something in writing?

ANTHONY FIORE: it was part of the state's announcement.

CHAIRPERSON TREYGER: Okay... [cross-talk]

ANTHONY FIORE: We can... we can get you information on that... [cross-talk]

CHAIRPERSON TREYGER: I appreciate that... [cross-talk]

ANTHONY FIORE: Sure... [cross-talk]

CHAIRPERSON TREYGER: ...because I... we don't have that in our records but I would like to make note of that because that is a concern that certainly I share... me and colleagues share and the other issue becomes what does this mean in practical terms for New York residents as far as, you know paying the energy bills as... according to our information a lot of the... if you're saying that the, the city might have to rely on its generators located with, within the five boroughs and according to our

analysis they are not cheap to operate, is that correct?

SUSANNE DESROCHES: We are also concerned about it a potential cost increase.

CHAIRPERSON TREYGER: And so what are those... and that's what I'm trying to get at, what is their estimates of what type of increase residents might be seeing as a result of, of this... of this shift in transition?

SUSANNE DESROCHES: So, it's the energy market so we don't have estimates at this time for what a bill impact could be, we only have a, a sense of whether or not increased generation in the city would, would cost more money so we don't have numbers to provide for you today on what those increases would be.

CHAIRPERSON TREYGER: I think that would be very important because look I think that this council has been very vocal and very clear about certainly addressing the challenges of climate change and, and also making sure that we are reducing safety risks or... you know and, and we get that but I, I am concerned that in all this... all this transitioning whose going to pay the brunt of it and that is a very

1 serious concern that we share and again this is...  
2 we're not bringing this only at the feet of the city  
3 this is... this requires the state and Washington... and  
4 federal government to all work with us on this but I,  
5 I see a very real scenario where the most vulnerable  
6 New Yorkers who are prone to not just natural  
7 disasters but they are going to be facing a financial  
8 disaster if we don't take steps to remedy this and so  
9 has... have there been discussions with your  
10 counterparts and the state and others about what will  
11 be done not just to mitigate the potential energy gap  
12 loss but the cost associated with this transition  
13 particularly to the most vulnerable New Yorkers?

15 ANTHONY FIORE: Yeah, so I'd, I'd like to  
16 add to what Susan... Susanne said and she's right that  
17 the market is dynamic and so it's hard to forecast  
18 what the ultimate impacts will be but we, we have  
19 looked at energy forecast both prior to the  
20 announcement of the closure and after the  
21 announcement of the closure and those forecasts to  
22 date haven't shown a, a... any substantial increase in  
23 prices. Now that could change as, as things change  
24 over time but we continue to watch those and we  
25 continue to work with the state to try to mitigate

any potential impacts but so far, the data that we have haven't shown that happening. We've also worked with our utility partners through their rate cases to ensure that low income populations, the, the discounts that they receive keep up with increases in, in rates and... you know just... it should be, you know recognized that the commodity portion of a bill is the, the smallest component of, of bill delivery charges and taxes and fees are... make up the, the majority of, of that bill. So, a small increase on the commodity side has a lesser effect on the total bill than, than other components but, but in, in this last rate, rate case working with, with Con Ed there was substantial improvements to the low income program in, in terms of the number of folks that are eligible and in terms of the discount levels that they receive.

CHAIRPERSON TREYGER: So, if you're saying that taxes and fees make up a sizable portion of, of this bill then we need to be proactive in seeing what we can do to offset these types of cost increases to those New Yorkers who could afford them least. Again we're, we're, we're trying to address the issue of certainly renewable energy moving in

1 that direction and, and addressing the threat of  
2 climate change but not on the backs of, of work,  
3 working people that could afford it the least and  
4 that, that to me is just something that we have to be  
5 very, very mindful of from the city level to the  
6 state to, to the federal level, I mean again  
7 everyone, you know is, is... I love the energy and the  
8 enthusiasm around this movement but when it comes to  
9 practical terms and who's actually going to pay for  
10 it that, that worries me deeply and so... now you had  
11 mentioned in your testimony and we've heard as well  
12 that I think Con Edison has spent about a billion  
13 dollars or so on storm hardening measures, has that  
14 translated into any rate increases?

16 ANTHONY FIORE: So the one billion  
17 dollars that they spent is capital dollars that they  
18 can earn a return on investment on so that... you know  
19 there is an increase on that but that's a necessary  
20 increase in order to maintain the system. At the same  
21 time the, the prices for the commodity portion that I  
22 spoke about have come down substantially so the net  
23 effect on rates have been mitigated from what they  
24 otherwise have been. With that being said in the last  
25 rate case there, there were rate increases and the



city fought extremely hard to make sure that the low-income programs kept up with those rate increases and we were very successful in, in achieving that.

CHAIRPERSON TREYGER: So, again I think that we, we need to really take a very, very hard close look at this issue because there is a, I think a cumulative impact on residents as far as their energy bills, heating bills, water bills also just for small businesses as well in areas that really are impacted in more ways than one. This... again I, I think that we need to make these resiliency measures a reality, I, I, I get that but we're going to have to be very innovative about making sure that this is not... this is not going to be disproportionately affecting certain communities that really can afford them least. Now I also want to just take note in your testimony I'm not sensing a lot of confidence in what's taking place with the Long Island Power Authority with regards to the Rockaways and I know my colleague I'm sure will have some concerns, I mean in your testimony I keep reading that you're pushing them, you're pushing them, you're pushing them but I'm not reading measures of actually taking place,

can you speak to your concerns with regards to the vulnerabilities with LIPA that affects New York City?

SUSANNE DESROCHES: So I can speak about what, what we know that LIPA has done post Sandy. They have rebuilt, hardened, and elevated three substations that serve the Rockaways so that's the Rockaway Beach, Far Rockaway, and Aberdeen, Aberdeen, excuse me and then they have retired one substation. So, they have done and are continuing to work on their substations. They have utilized flood elevation designs that are above codes and they are also hardening about a thousand miles of their overhead distribution lines. So, they have been doing work post Sandy, I would say that on the storm hardening collaborative we would like it to be a formal collaborative as we have advocated for and did with Con Edison and have just started with National Grid but it is currently a voluntary collaborative.

CHAIRPERSON TREYGER: And are you satisfied with the level of information and cooperation that you've been or have not been receiving from this authority?

SUSANNE DESROCHES: I think that there is additional work that we could explore with them

1  
2 around other climate risks besides storm hardening so  
3 as we have... are doing with National Grid currently  
4 we're looking at changes in precipitation and we're  
5 looking at heat and we would like to explore those,  
6 those risks with LIPA as well.

7 CHAIRPERSON TREYGER: Well I think that  
8 this is something that we need to actually keep the  
9 pressure on and actually get done because this is...  
10 they... the, the Rockaways and I'm sure my colleagues  
11 would agree were one of the hardest hit areas as well  
12 and folks are still recovering and again if it's not  
13 going to be a natural disaster it'll be a financial  
14 storm one, one shape or another affecting these  
15 families. I, I read here in your testimony that there  
16 are funds from the State's Clean Energy Fund that can  
17 be used to defray some of the cost of renewable  
18 replacements resources, can you speak to what is  
19 actually in that fund right now, do you have any data  
20 or information about what, what is in that fund and  
21 what type of... what type of... what, what amount of  
22 money are we talking about to defray the cost?

23 ANTHONY FIORE: So, I don't have the  
24 total dollar amount that's in the fund, fund but we  
25 can get that for you. The Clean Energy Fund was a

consolidation of separate pots of money that have been collected as part of the utility bills, right, so there's been service benefit charges and energy efficiency performance standard charges. The state has now consolidated all of those into one fund and in order to provide more flexibility in the programs that those funds can be used for. So, these, these are all for energy efficiency renewable energy programs so... you know they're... they are reinvesting those funds, what we've suggested in our testimony which is not what they've considered so far is using a portion of those funds to mitigate the cost that, that Susanne spoke to.

CHAIRPERSON TREYGER: And we don't even know... well you mentioned you'll get back to me with a number of how much they, they have currently but we don't even... do... we have a sense of how much funds are we actually talking about to defray these costs and this is something that you're still analyzing or... I, I am concerned and I think that we have to... we have to really, you know start really getting the public aware of this because this is happening, I mean again all these announcements are happening but the devils and the detail about who's actually going to pay for

1 these announcements and it's going to get very real  
2 for people just like on the issue of flood insurance,  
3 it's not talked about very much sometimes these days  
4 because so much is going on but when FIMA finalizes  
5 those maps in a matter of a year or two it'll get  
6 very real for thousands and thousands of more New  
7 Yorkers that are currently not mandated to get it but  
8 will be mandated to get it and so this is coming in a  
9 matter of a number of... a couple of years where people  
10 will see potentially, you know increases on their... on  
11 their energy bill. Now I've also received information  
12 that... there are reports that the 1,000 megawatt  
13 Champlain Hudson Hydro Power Express and there's  
14 another plant it's called the... I think the 650  
15 megawatt CPV, I think you might have mentioned one of  
16 them power plants and the 1,000 megawatt Cricket  
17 Valley Power Plant could be brought online soon to  
18 offset the, the energy loss that we're... from Indian  
19 Point, do, do you have the status of any of these  
20 projects, I know you mentioned... or one or two in  
21 particular but the Hydro Power one I'm particularly  
22 interested in if you have any data on that?

23  
24 ANTHONY FIORE: So, I could speak to the  
25 Hydro Power one... [cross-talk]

CHAIRPERSON TREYGER: ...please... [cross-talk]

ANTHONY FIORE: ...first. That's a project that's been in development for approximately ten years now. They have received all of their permits that are required to build that line and our understanding is that they are now seeking off takers for the power in order to get to financial close.

CHAIRPERSON TREYGER: So... but they're, they're not at operation still there... [cross-talk]

ANTHONY FIORE: They, they are not at operation, it's not constructed... [cross-talk]

CHAIRPERSON TREYGER: ...not constructed... [cross-talk]

ANTHONY FIORE: ...they have all the permits to, to do that, they are currently in the New York independent system operators... [cross-talk]

CHAIRPERSON TREYGER: ...yeah... [cross-talk]

ANTHONY FIORE: ...interconnection que that's a... that... they entered the 2017 generation class que in, in March that's about an 18-month process at the completion of that process they would be cleared to begin construction and our

understanding it's a... is that it would be about a two year construction period.

CHAIRPERSON TREYGER: So in, in essence what we're... the sense I'm getting is that many of these projects are not, not even at operation, they're not even built yet or in the process of being built and so there's going to be a reliance on generators that are existing which if I'm not mistaken, you know some of these stations require the burning of coal, is that correct?

ANTHONY FIORE: So, there are no generating stations within the city that burn coal... [cross-talk]

CHAIRPERSON TREYGER: But do we... does New York City use energy that is sourced from burning coal?

ANTHONY FIORE: So, the way that the transmission system works is it's like a swimming pool all the electrons going to that pool and, and then become fundable, there, there is some operating coal plants within New York State, there's certainly coal plants outside of New York State. The governor has announced that the coal plants within New York State will be closed by 2020 outside of the state

1                   that, you know that's a different story. We have... we...  
2                   you know don't have as much imports from out of state  
3                   that... as we do of in state generation and as more and  
4                   more renewables come online in the state to meet the  
5                   50 by 30 target, 50 percent of the energy consumed in  
6                   the state would come from renewable generation by  
7                   2030. The overall carbon intensity of the state grid  
8                   should improve. Now that being said that, that, that  
9                   means the upstate nuclear plants are, are still  
10                  online as well should those close then the carbon  
11                  intensity may change.

13               CHAIRPERSON TREYGER: Do you have a  
14               breakdown of the prices... comparison of the prices of  
15               electricity generated by nuclear plants, natural gas  
16               plants, solar installation, wind turbines, and hydro  
17               power?

18               ANTHONY FIORE: So, the, the way that the  
19               markets work in New York State is, is that they all  
20               bid in and, and there's a... you know a scale as you...  
21               its... power gets met by the lowest bid and then if  
22               there's residual energy demand the next highest bid  
23               gets taken and put into the market. So, it's, it's  
24               not a matter of what resource... what, what energy  
25               resource it is, it's a matter of their bid pricing



1                   into the... to the market. So, I think that answers  
2                   your question.  
3

4                   CHAIRPERSON TREYGER: Well in, in a way  
5                   it doesn't, I, I'm looking to, to see is it cost  
6                   prohibitive or is it cost effective for New York  
7                   residents that's, that's the question.

8                   ANTHONY FIORE: So... okay, when, when  
9                   different technologies bid into the market they're  
10                  bidding in on their variable cost, their, their  
11                  operating cost so that's... the majority of that is the  
12                  fuel cost to them and so renewable resources often  
13                  bid in at very low or in some instances negative  
14                  prices and so then are the first ones to be taken in,  
15                  natural gas generally speaking would, would come next  
16                  and then you would go up the scale from there and,  
17                  and so coal would be towards the highest end of, of  
18                  that.

19                  CHAIRPERSON TREYGER: Alright, I'm, I'm  
20                  just... I'm just going to, you know again reiterate a  
21                  concern that I have is that in, in, in all this  
22                  movement and, and, and transitioning and shifting to  
23                  renewable energy or we assume there was this major  
24                  shift, it doesn't appear that we have fully shifted  
25                  in that direction, I think that we're talking about

it and it hasn't even really fully happened. I think we're still relying on for the most part antiquated forms of energy of production but I... all, all I'm hearing is that we, we don't have the capacity yet to, to shift and we... or I keep hearing that there are rate increases on the horizon and that's going to disproportionately hurt the very people that are, are vulnerable to a whole host of challenges right now. I do have some more questions but I'm going to turn it over out of respect for time to my colleague, Council Member Perkins, we welcome... this committee welcome... I'm sorry, who else is here? Oh, Council Member Margaret Chin we've been joined by her as well but Council Member Perkins... [cross-talk]

COUNCIL MEMBER PERKINS: Thank you...

[cross-talk]

CHAIRPERSON TREYGER: ...you got the floor...

[cross-talk]

COUNCIL MEMBER PERKINS: ...very much. No substantial increase just always sounds funny to me. What are the exact increases the customers should anticipate? Of course, substantial is a... you know is a... is a code that says you're not ready to share what those increases will be then... so you... so help, help

us better understand for our constituents what this means for their pocket?

ANTHONY FIORE: So... [cross-talk]

COUNCIL MEMBER PERKINS: In dollars and cents if you can because that's, that's what this is about.

ANTHONY FIORE: So, so we, we can do... try to answer that to the best of our ability because we don't have all that data... [cross-talk]

COUNCIL MEMBER PERKINS: Okay, just... [cross-talk]

ANTHONY FIORE: ...available to us, right and so what we've... what we do have available to us are energy price forecasts, okay and forecasts are as good as forecasts are but when we... when we looked at the energy forecast prior to the announcement of Indian Point closing and then we look at the energy forecast post Indian Point closing there was no discernable increase in, in those costs.

COUNCIL MEMBER PERKINS: So, what, what, what... why is that... why did that... why was there no discernable increase, what, what was done that sort of mitigated the... [cross-talk]

1                   ANTHONY FIORE: So, so the, the forecast  
2  
3 look at a lot of different variables but the, the  
4 cost of fuel is one, the announcements of, of new  
5 generation coming online, announcement of generation  
6 coming offline and so forth and so when it... when the  
7 taking all those variables into consideration for  
8 what is known today those forecasts did not change  
9 prior... from prior to Indian Point announcement  
10 closing to after. There are lots of things that can  
11 happen between now and then that could change that  
12 and we share... [cross-talk]

13                  COUNCIL MEMBER PERKINS: Change it for  
14 the better or change it change it for the worse?

15                  ANTHONY FIORE: In either direction.

16                  COUNCIL MEMBER PERKINS: So this is  
17 spooky because it doesn't... it doesn't quite assure  
18 folks of when... how do... how do... how do folks prepare  
19 for this if they don't know, if you don't know which  
20 way it's going?

21                  ANTHONY FIORE: That is... that is no  
22 different today than it was yesterday, the, the  
23 energy markets are, are dynamic, there, there are...  
24 [cross-talk]

2 COUNCIL MEMBER PERKINS: You're saying  
3 they're unpredictable?

4 ANTHONY FIORE: To a large degree...  
5 [cross-talk]

6 COUNCIL MEMBER PERKINS: ...then that is...  
7 [cross-talk]

8 ANTHONY FIORE: ...they are... [cross-talk]

9 COUNCIL MEMBER PERKINS: ...not the same  
10 thing as... [cross-talk]

11 ANTHONY FIORE: ...unpredictable... [cross-  
12 talk]

13 COUNCIL MEMBER PERKINS: ...they're... but to  
14 what extent... what, what predictability can you share  
15 with us that we can share with folks that are going  
16 to have the... have to deal with this?

17 ANTHONY FIORE: What... [cross-talk]

18 COUNCIL MEMBER PERKINS: How... [cross-  
19 talk]

20 ANTHONY FIORE: ...what, what we can share  
21 with you is what is publicly available to us and  
22 that's information... [cross-talk]

23 COUNCIL MEMBER PERKINS: ...in dollars and  
24 cents and in terms of the impact for the consumer.

1                   ANTHONY FIORE:  So, so what's, what's  
2  
3     available to us are information from the, the federal  
4     government through the energy information  
5     administration that has forecasts for energy prices  
6     going forward. Those prices remain low because  
7     natural gas prices remain low. Now that's a forecast  
8     but, but that remains low going out into the  
9     foreseeable future, there are geopolitical forces  
10    that could change that, there are other market  
11    interactions with the opening of, of L and G Exports  
12    that could affect that. So, the sense I'm trying to  
13    give you is that the information that is available to  
14    us today predicts low energy prices going forward but  
15    there are lots of things that influence that and, and  
16    they could change.

17                  COUNCIL MEMBER PERKINS:  Okay, so I, I, I  
18    guess this is, is still sort of in a situation which  
19    when I have to say the, the community meeting about  
20    this what, what, what would you... what is the message  
21    that I... that we should be discussing that tells them  
22    some good news?

23                  ANTHONY FIORE:  Well I, I think the good  
24    news is that today the energy forecast is... forecasts  
25    have not changed, they have not changed as a result

of a change in federal administration, they have not changed based on the announcement of Indian Point closing, they are... they have today still remained forecasting low energy prices, that's, that's the good news. Now, you know we are watching these and there's... you know constantly and you know making sure that we understand, you know what the forecasts are, are telling us and predicting and you know we share the council's concern with energy prices and their impact on the most, most vulnerable populations and, and that's why we've worked very hard with our utility partners to ensure that the low-income programs keep up with rate increases. Again I'll, I'll say it... I, I, I've said it before but in this last rate case an additional 76,000 New York City residents are now eligible for low income programs in the Con Edison program, there's approximately 400,000 customers of Con Ed that are in that low income program and I believe on the electric side the, the, the rate is about 31 percent... or 13... I'm sorry, 13 percent of, of the average customer's bill. On the gas side its approximately 31 percent discount level. So, so those have all been increases that we've

achieved to try to keep up with that and protect the most vulnerable populations.

COUNCIL MEMBER PERKINS: So, you're... but, but in the event, that it's too much for the most vulnerable what do we do in... just in case?

ANTHONY FIORE: I, I think we continue to work through the... through the rate cases and through the PSC to ensure that the energy burden on those populations are, are not something that pushes them further down and pushes more people into that category. That's not good for anyone, it's not good for the utility companies... [cross-talk]

COUNCIL MEMBER PERKINS: So how do we mitigate that... how do we mitigate that assuming the worst-case scenario that such an unfortunate circumstance should prevail, how do we mitigate that? I... because we're... I'm more concerned about the, the folks that can't manage it and so how do we... how do we help them, what, what, what do... what is our responsibility towards helping them?

ANTHONY FIORE: Again, its, it's through the proceedings with the utilities to make sure that the low-income programs are, are helping those, those populations.



COUNCIL MEMBER PERKINS: Okay, so I guess you'll help us manage that with them.

ANTHONY FIORE: Absolutely.

COUNCIL MEMBER PERKINS: Okay...

ANTHONY FIORE: Yes.

COUNCIL MEMBER PERKINS: Thank you.

CHAIRPERSON TREYGER: Thank you Council Member and just to build on some of the good points by my colleague it, it appears that the city is saying that its really so much at the mercy of external forces, is that correct, that you're at the mercy of state actions or inactions, federal actions inactions, global markets, is that correct?

ANTHONY FIORE: When you're talking about energy prices... [cross-talk]

CHAIRPERSON TREYGER: Correct... [cross-talk]

ANTHONY FIORE: Certainly, we, we don't have control over energy prices.

CHAIRPERSON TREYGER: Right. So many... typically the city has an attitude which, which we appreciate to the extent possible that we're not going to wait for Albany or we're not going to wait for Washington, we're going to try to lead the way,

what, what are... what can we do that we're not doing now to lessen our dependence on these external forces and to create renewable sources of energy right here within our city jurisdiction?

ANTHONY FIORE: So, I don't think it's, you know as simple as creating generation in the city by itself, we, we are working very hard to increase the amount of distributed generation throughout the city, most... mainly solar at this point because that's what fits best into this urban landscape and prices for that technology have fallen considerably over time so the Mayor's Office has piloted a, a New York City Solarized Program in community board six. Last year that exceeded the, the targets that were set for it, we've been working with the state to change the regulations around community shared solar to better fit New York City specifically because it is so much different than the, the rest of the state. We've been successful on that, we are working with the state and... to ensure that the value of distributed solar generation takes into account the environmental benefits as well as social benefits that are associated with it and, and beyond in-city distributed generation we believe that there needs to

1 be more transmission into the city so that the city  
2 has access to more clean, lower cost generation  
3 upstate and, and elsewhere. We've been working with  
4 the state and the federal government to identify wind  
5 energy areas off shore of Long Island and New Jersey  
6 and that work continues so that can begin to supply  
7 the city as well. So, we're working on a number of  
8 different fronts to... [cross-talk]

10 CHAIRPERSON TREYGER: I mean I... [cross-  
11 talk]

12 ANTHONY FIORE: ...control that... [cross-  
13 talk]

14 CHAIRPERSON TREYGER: ...I'm not... this... for  
15 the purpose of this hearing I'm not going to delve  
16 too far off topic but one thing I really haven't  
17 heard you say is about how do we make our, you know  
18 building codes and, and other types of things more  
19 energy efficient to the point that we are  
20 significantly using less energy and being a lot more  
21 efficient? There are already international standards  
22 about energy efficiency that I hear people praising  
23 but I'm not sure if they're being implemented as, as  
24 far as... and again I understand that there are factors  
25 involved in that but that's where... that's where I

think we need to be thinking about too, how do we also find ways to, to use less, be more efficient and to find more renewable sources of energy... [cross-talk]

ANTHONY FIORE: I'd like to say we... that we agree with you completely and we are working on the energy efficient front as, as well.

CHAIRPERSON TREYGER: Right, we, we need to see some concrete steps. Now my colleague, Council Member Margaret Chin.

COUNCIL MEMBER CHIN: Thank you Chair. I would like to also follow up with what the Chair's been talking about because in your testimony I was looking through it, I'm really happy to see the emphasis on renewable energy and especially solar energy and I would really like to see that program expand and get underway quicker because I know that we're talking about right now you just kicked off a project to provide solar power to 88 city owned buildings, we have a lot more city owned buildings and a lot of schools so really should... I mean are you like targeting a time line to get maybe every school use, using solar energy, all the office... city office buildings and also to create some incentive for

private buildings because I think that's something that really to get the whole city behind because I think that by all of us working together we could lower the energy cost but at the same time we can really, you know play a lead in being more energy efficient and also creating everyone to take part in conserving energy because... I mean things that we're, we're taught, you know early, early on, I mean we should still do that, when you leave a room turn off the light, right, brushing your teeth, turn off the... turn off the water. So, the things that we should all be practicing and especially with the kids in the school. So, in the solar energy front how are... how are you working with the city council, let's say how can we work together to sort of like speed up the time line and really get that going as quickly as possible?

ANTHONY FIORE: So, we, we share your enthusiasm for, for renewables and for efficiency and thank you Chair Treyger for, for bringing that up in this hearing because it is extremely important. So, the city has a 100-megawatt goal for rooftop solar for city buildings by 2030, we do expect to achieve if not exceed that goal. The city had announced last

fall a new citywide target for 1,000 megawatts of, of rooftop solar and a 100-megawatt hour energy storage goal which combined with, with solar can reduce, you know peak demand, help the grid in times of, of constraint, lower energy costs for those buildings that employ that. We are working with the Department of Education and the school construction authority and for every new school that's built or schools that has a roof renovation whenever it is practical solar will be installed on those roofs and we also have training programs put in place. We are working with the Department of Education for renewable energy curriculum in their STEM program, the science technology engineering and, and mathematics program. So that, that is being rolled out to schools all across the city and in addition to that we're working with some of the technical schools to actually provide applied training for those students through their electrical classes to be qualified to enter into the, the solar industry when they... when they graduate.

COUNCIL MEMBER CHIN: Any, any progress with the private sector in terms of getting commercial building to be more efficient and not, you

1 know light up... I mean we... New York City looks  
2 beautiful at night with all the buildings lighting up  
3 but is there a way to work with them to not use so  
4 much electricity but still make the city beautiful at  
5 night?  
6

7 SUSANNE DESROCHES: So, the one point  
8 about solar that I wanted to make on the private  
9 sector was that in fact we have about four times the  
10 amount of solar installed in the city than in pre-  
11 2014 so that's about 105 megawatts of solar and 8,300  
12 installations. So that's quite, quite an achievement  
13 and that's a combined number so that includes the  
14 private sector.

15 COUNCIL MEMBER CHIN: But what about... is  
16 there any work towards working with the private  
17 buildings to sort of conserve energy conservation?

18 ANTHONY FIORE: Yeah... yes, there, there,  
19 there are, are many programs that the, the Mayor's  
20 Office is running, I... one that I'd like to highlight  
21 is, is the Retrofit Accelerator. This is a program  
22 that connects building owners with technical  
23 resources and financial resources to implement energy  
24 efficiency measures, it, it, it provides, you know  
25 use cases to demonstrate to building owners the, the

benefit to them from actually making these investments and then it connects them also to financial resources to help put the capital in place to actually fund, fund the projects.

COUNCIL MEMBER CHIN: Which agency is managing that, is it... [cross-talk]

ANTHONY FIORE: So, that's, that's the Mayor's Office of Sustainability.

COUNCIL MEMBER CHIN: Oh okay, so it's not... is it connected together with HPD or... [cross-talk]

ANTHONY FIORE: Yes, they, they are connected with HPD through some of H, HPD's programs. They, they work with many different city agencies in implementation of, of that program but its, its geared at, at the, the private sector.

COUNCIL MEMBER CHIN: Great, thank you. Thank you.

CHAIRPERSON TREYGER: Thank you Council Member. What part of the city's power system, generators, transmission, infrastructure, distribution infrastructure needs to be improved the most in order to deliver cheaper more reliable green



energy to the city over the long term, has there been an analysis of that?

ANTHONY FIORE: So, generally speaking generation that is produced in city is more expensive than generation produced outside of the city and that's a result of the higher cost to build and operate within, within the city. So that... [cross-talk]

CHAIRPERSON TREYGER: Can you explain why is it more expensive if its... if it's in the city, I'm just curious?

ANTHONY FIORE: There are... there are many factors that lead to that, I mean you know from, from the simplest things as logistics, transportation cost to move... [cross-talk]

CHAIRPERSON TREYGER: If it's in the city?

ANTHONY FIORE: To move materials into the city, absolutely.

CHAIRPERSON TREYGER: So, you're saying that energy from upstate New York somehow cheaper for us to, to utilize than energy from within the five boroughs?

1 COMMITTEE ON RECOVERY AND RESILIENCY 50

2 ANTHONY FIORE: So, energy that's  
3 generated upstate is cheaper than energy that's  
4 generated in the city... [cross-talk]

5 CHAIRPERSON TREYGER: But you said  
6 transportation... [cross-talk]

7 ANTHONY FIORE: ...at utilities... [cross-  
8 talk]

9 CHAIRPERSON TREYGER: ...cost so I, I  
10 wonder... [cross-talk]

11 ANTHONY FIORE: ...so we're talking about  
12 development of new generation, you asked about...  
13 [cross-talk]

14 CHAIRPERSON TREYGER: Okay, okay... [cross-  
15 talk]

16 ANTHONY FIORE: ...new, new generation so...  
17 [cross-talk]

18 CHAIRPERSON TREYGER: ...right... [cross-  
19 talk]

20 ANTHONY FIORE: ...it costs more to build  
21 in New York City than it does to build in, you know  
22 upstate New York or... [cross-talk]

23 CHAIRPERSON TREYGER: ...okay... [cross-talk]

24 ANTHONY FIORE: ...in Pennsylvania.  
25

CHAIRPERSON TREYGER: Okay. And we hear a lot about off shore wind and is it likely that there will be large off shore wind projects that will provide power to the city in the future, I mean if you can give us an, an update on that?

ANTHONY FIORE: I, I think it, it is absolutely likely that that will happen. The first... [cross-talk]

CHAIRPERSON TREYGER: When... [cross-talk]

ANTHONY FIORE: The first off shore wind project in the United States became operational last year, that's off of the Coast of Rhode Island. The Long Island Power Authority approved a 90-megawatt offshore wind project earlier this year that will be serving the South Fork of Long Island. We... the city worked with our state and federal partners to have the first wind energy area off of Long Island identified and have an auction to hold that lease at the end of last year. So that will be the... that, that is likely to be the first site developed although we are continuing to work with the state and the federal government to identify additional wind energy areas off of the coast of New York and New Jersey that could supply the city, you know I can't give you a

definitive answer of when the first project that would serve the city would come online but what we're... if we're looking at... there's a... there's a wind energy area, there's a lease for that that's being held and if we look at the development cycle and permitting cycle probably around mid-2020's would be the first opportunity for, for offshore wind to actually be supplying power to the city. It... you know there, there's a long process to do the environmental analysis as you can imagine to actually build these projects but that could be a project of up to 700 megawatts and the state has announced that it is looking for 2.4 gigawatts of offshore wind to be built and to serve the state which would be delivered to New York City and Long Island. So, it, it is... we, we believe it will absolutely come.

CHAIRPERSON TREYGER: And... but you're saying you're, you're, you're assuming you're not confident that this is happening in the near future, this is still you're saying maybe a decade or so away, is that correct?

ANTHONY FIORE: Ten, ten years, seven, seven to ten years and that's, that's typical of large capital construction cycles.

CHAIRPERSON TREYGER: Yeah, I know it takes about four or five years to build a bathroom in a park in New York City so I, I can imagine what it'll be to, to build off shore wind. I, I, I just... a couple of... couple of things just to, to reiterate and just to emphasize here is that I am... I am concerned about these transition periods, the gaps in between them who bears the brunt of the costs of these gaps. I'm also... if, if I can get a definitive answer from you about as we're moving in this direction let's say ten years from now hopefully, these wind farms are, are, are functioning and giving... providing us power is this... certainly this is renewable sources of energy but is this going in your... in your expertise and your estimation is this going to also translate into lower costs for families in New York, what is that do as far as cost?

ANTHONY FIORE: So, off shore wind specifically is still very costly, the supply chain for that does not exist in the United States so it can be expected that the first projects will be supplied from Europe where there's an established and mature supply chain. The, the state can take action, policy action and we are advocating for such that can

1                   help mitigate those costs but the first projects will  
2                   still be expensive and, and that's a relative  
3                   measure, right and, and that's because prices for  
4                   natural gas today are so low. That's a... that's a good  
5                   thing for your pocket, right, it's not the best thing  
6                   for our environment but that's the reality of the  
7                   prices today... [cross-talk]

9                   CHAIRPERSON TREYGER: And folks have to  
10                  remember that natural gas is also a fossil fuel which  
11                  means it's not infinite and, and, and so you know I,  
12                  I understand people... I get it, people have... there,  
13                  there's a sense of well it's cheaper, its, it's good  
14                  for now but we have an obligation and moral  
15                  obligation to also inform the public that this is not  
16                  an infinite source of energy, at some point it's  
17                  going to run out and we need to start taking steps  
18                  right now. Now you're saying that Europe... there are  
19                  parts of Europe that are already moving... or already  
20                  moved into the wind direction and we've been... I, I  
21                  feel like I've been hearing about... I've been... I  
22                  taught government for almost a decade before I  
23                  entered the council, we... I've been talking about  
24                  this, hearing about this for years from government,  
25                  from national leaders in this and we're still lacking

1 in capacity, we're still just talking about it and  
2 making announcements in my opinion and we're just...  
3 we're still not there and I, I... I'm not... this is not...  
4 I'm not putting this at the feet of the city because  
5 a lot of people have responsibility here but its,  
6 it's fascinating to me how much we've been talking  
7 about this for so many years and we're still not in  
8 the implementation phase and its, it's very, very,  
9 very frustrating. You did mention about curriculum in  
10 schools because this is something that's also very,  
11 very important to me that as we're shifting in this  
12 direction we're building capacity of our... of our  
13 children and, and of our public-school students and,  
14 and our residents to be the ones that will actually  
15 build these new technologies, install these new  
16 technologies, maintain them to have... to work with,  
17 with labor, to continue opening doors for  
18 opportunities for, for our residents. This has been  
19 really, really important, there are some schools that  
20 we're still building carburetors that will probably  
21 be obsolete 20, 30 years from now and we need to  
22 shift them in their focus to towards these renewable  
23 sources of energy. So I think it's a good start but I  
24 will tell you I will continue to advocate for more  
25

1 investments in our school system to build capacity  
2 for, for our kids and, and, and for the future to  
3 continue working with labor that these are also going  
4 to be good paying jobs for people and, and careers  
5 and last point I'll, I'll say because I've, I've  
6 heard it a lot from my residents and I've actually  
7 had a... you know I've, I've seen some of this stuff  
8 happen in, in my own, you know community where a...  
9 there are reports... still reports of energy service  
10 companies called ESCO's if you're familiar with them,  
11 that are targeting low income family seniors in New  
12 York City for services often using deceptive  
13 marketing practices and charging much higher rates.  
14 So, first you know how are we kind of dealing with  
15 that today but is there going to be a larger market  
16 for these companies as the city begins to use new  
17 electric power sources and if so is the  
18 administration working with the... with the PSC to  
19 address this ongoing concern?

21 ANTHONY FIORE: Yeah... yes and, and the  
22 Mayor certainly shares your concern and has been  
23 advocating for better enforcement of ESCO practices  
24 for a very long time and there is a proceeding that  
25 is open now at the public service commission, we've



1           been working with, with the state in just that in, in  
2           make... changing the framework, changing the rules and  
3           changing the regulations to prevent those practices  
4           from occurring and at, at this point the, the state  
5           has gone so far as to almost shut down that industry  
6           within New York State to the extent that these ESCO's  
7           are litigating some of the orders that the commission  
8           have, have set down. So, we continue to support the,  
9           the commission in rules that enforce protect...  
10          consumer protection. We do think that there is a role  
11          for ESCO's to play in a state to make sure that there  
12          are competitive markets that stay in place they... the  
13          rules have to be in place, the enforcement has to be  
14          in place to make sure that those deceptive practices  
15          are, are, are not happening not only here in, in New  
16          York City but throughout, throughout the state.  
17          We're... we feel very strongly and are completely  
18          aligned with you there.

19                           CHAIRPERSON TREYGER: But is, is the city  
20                   taking any measures to address these particular  
21                   entities, I mean we have consumer affairs... [cross-  
22                   talk]  
23                   talk]

24                   ANTHONY FIORE: Yes... [cross-talk]  
25

CHAIRPERSON TREYGER: So can you speak to what we're doing to educate people about... because they literally knock on your door and, and they start talking to you right there and then saying how this is going to be much cheaper, much cheaper and then folks complain that within a couple of months their bills are much higher and they're not using more energy, they're just getting billed for additional things so what are we doing from our end?

ANTHONY FIORE: Yeah, unfortunately I can't speak to what DCA themselves are, are doing, we can speak with them and get back to you on that. I can tell you that they have participated in the proceedings at the state level as well but for what specific actions they're taking here in the city we'll get back to you with that information.

CHAIRPERSON TREYGER: Okay and I, I know one of my colleagues has a question and I just want to just circle back and, and just say to you that we have to examine what's within our control, what's, what's within our reach and I heard you before mention that there are certain taxes and fees incurred on some of these bills and all these things, whatever we can do to mitigate the cost for seniors,

1                   for, for vulnerable New Yorkers, low income New  
2                   Yorkers and how we even define what low income means  
3                   because at... that, that also becomes subject for  
4                   debate but for, for vulnerable families, seniors,  
5                   people on fixed incomes, working folks that are  
6                   really struggling to make ends meet I, I think we're  
7                   going to have to take a very hard look and think...  
8                   take some steps to address what I... what I see as, as  
9                   a looming financial storm. My colleague Councilman  
10                  Deutsch is here and, and he has a question.

12                  COUNCIL MEMBER DEUTSCH: Thank you Chair.

13                Good afternoon. So, I represent Southern Brooklyn,  
14                parts of Southern Brooklyn which is a waterfront  
15                district as my colleague, Council Member Treyger. So,  
16                in my district we have... includes Sheephead Bay,  
17                Brighton Beach, and Hampton Beach. Now over the last  
18                three and a half or plus years we had issues with the  
19                light flickering, power outages, I know that Con Ed  
20                has put in money to the infrastructure which has, has  
21                become less common now than before in my particular...  
22                my particular district what I'm concerned about are...  
23                because of all... like for example just yesterday we  
24                had high winds and high tide and you never know when  
25                the power goes out and being that's in Southern

1 Brooklyn we have a high... a senior population and  
2 especially when you have people that are on life  
3 sustaining equipment so if there is a power outage  
4 and they're... they don't... they're not registered with  
5 Con Ed, right that's one thing. So... phase one would  
6 be like to, to register your residence with Con Ed or  
7 your apartment with Con Edison so this way they know  
8 that they can send an emergency services to that  
9 particular apartments or, or private home or  
10 building. So, when you... when you... we look at solar  
11 panels my concern is that we should look at those  
12 that on life sustaining equipment this way or... number  
13 one even for those that do call in and register with  
14 Con Edison and number two, for those that don't  
15 because they may not... they may not know about it,  
16 that's what's important throughout the beach. So,  
17 what do you think can be done, will it be done and  
18 number one in regard to outreach to senior citizens,  
19 outreach to the people that are on life sustaining  
20 equipment's, outreach to hospitals when people get  
21 discharged from the hospital or are on equipment they  
22 should be told and number two is regarding solar  
23 panels for those that are more vulnerable to it... to  
24 it.

ANTHONY FIORE: So, you're, you're right the first step would be to make sure that they're registered with, with Con Ed also New York City emergency management has a... has a role to play there as well. I think, you know your question about solar as the city is now kicking off programs to pair solar with energy storage and, and that's what would really be important for those situations so that no matter what time of day it is that there would be some power available to them so it... you know if they are on life sustaining equipment there, on life sustaining equipment during the during night and so pairing energy storage with solar panels would be really important for that. The city has been... the Mayor's Office of Sustainability has been working very closely with the Department of Building and the Fire Department as well as Con Ed on, on energy storage technology and having the different battery technologies approved for use in, in the city as you can imagine, you know the city's very dense, there are certain battery technologies that have been susceptible to spontaneous combustion and so there's a real concern that the, the right life safety apparatus are in place to make sure that these

1 systems are safe and, and Con Ed will, will be  
2 testifying today as well and they've, they've  
3 commissioned a, a study looking at a number of  
4 different battery technologies, we've been working  
5 with them on the results of that research and sharing  
6 that with the Fire Department to get them more  
7 comfortable with that technology and that is  
8 something that will happen, we're, we're going to see  
9 that happen, it's, it's not you know ready for mass  
10 market today in the city but we are kicking off  
11 projects. Partner Citywide Administrative Services  
12 will be initiating, initiating 18 projects this year  
13 that combine solar with energy storage mostly at, at  
14 schools but this will provide the use cases and, and  
15 test bed to lead to that, that market penetration  
16 that will help in, in the exact situations that  
17 you're talking about.

18  
19 COUNCIL MEMBER DEUTSCH: So, what's the  
20 reason for the pilot project at the schools?

21 ANTHONY FIORE: It's to demonstrate the,  
22 the technologies, there's many different types of  
23 battery storage, different chemistries, it's to  
24 demonstrate their usefulness, it's to demonstrate the  
25 safety of those and so there, there are... you know

very stringent protocols in place for these pilot programs so that we can build those use cases.

COUNCIL MEMBER DEUTSCH: No, why did they choose the schools?

ANTHONY FIORE: It's one, schools have very good roofs for solar, you, you need... you need a, a good roof for that, they have space generally speaking for the batteries themselves and often these schools serve as places of refuge for our residents during times of, of natural disasters and so it's to have that available.

COUNCIL MEMBER DEUTSCH: Are these schools listed as an evacuation center, these schools?

ANTHONY FIORE: I can get you the list of schools and we can look at that, I don't have that in front of me at the moment.

COUNCIL MEMBER DEUTSCH: Okay, thank you.

ANTHONY FIORE: You're welcome.

CHAIRPERSON TREYGER: Okay, thank you. I, I do just have one, one last follow up question because I think we're hearing from Con Edison next, has there been an, an examination done by your offices with regards to the Mayor's Housing Plan and

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all the infrastructure that's necessary to support that growth is in place in, including energy infrastructure and water and sewer infrastructure and telecommunications and, and so forth.

CHAIRPERSON TREYGER: But, but is there a definitive answer about is capacity... is capacity there to sustain this, this amount of development?

ANTHONY FIORE: So, it depends where you're... where you're talking about and it's very... it's very region specific and, and so what I... what I can tell you is that that analysis is done now when there, there's growth identified, growth areas identified.

CHAIRPERSON TREYGER: Well to me I look at the city as one like so we all should have capacity, I mean in, in, in my neighborhood for example during Sandy we had a major issue with Coney Island Hospital, their, their ER and others... their infrastructure was severely damaged and, and patients had to be then transferred to other parts of Brooklyn so... and central Brooklyn was not as impacted as... from Sandy as the coastal areas of Brooklyn so it impacts them too so we're kind of interconnected but overall there should be... capacity should be there, I mean

1                   that... it... we should have a citywide focus of capacity  
2                   in general and the, the Mayor's plan doesn't specify  
3                   only certain areas of this housing, he's looking for  
4                   opportunities across the city to build additional  
5                   affordable housing so I, I, I just think that we need  
6                   to make sure that capacity... as residents... at every...  
7                   almost every community board meeting you go to in the  
8                   city of New York whenever there's talk of development  
9                   there's, there's always going to be a question about  
10                  do we have the infrastructure which is a very valid  
11                  question... [cross-talk]

13                 ANTHONY FIORE: Absolutely... [cross-talk]

14                 CHAIRPERSON TREYGER: ...and that's your  
15                 sewer system, that's your... and that's also an issue  
16                 of, of our energy supply so I just think that we need  
17                 to be very, very mindful of that. Yes, my colleague  
18                 has one last question... [cross-talk]

19                 COUNCIL MEMBER PERKINS: As far as the...  
20                 [cross-talk]

21                 CHAIRPERSON TREYGER: ...yes...

22                 COUNCIL MEMBER PERKINS: ...[off mic] 18  
23                 projects at schools is that... is, is that list  
24                 available and places of reference...

ANTHONY FIORE: We, we will make that list available to you Council Member.

CHAIRPERSON TREYGER: Okay, thank you very much and we thank the administration for their time.

ANTHONY FIORE: Thank you.

CHAIRPERSON TREYGER: Next I'd like to call up Patrick McHugh from Con Edison and a familiar face around City Hall, Kyle Kimball from Con Edison. Do you... I don't know if... for sure if you or Kyle, Kyle have any opening remarks or...

PATRICK MCHUGH: I, I have the opening remarks...

CHAIRPERSON TREYGER: Oh, great. So, you may begin, sure, thank you.

PATRICK MCHUGH: Okay, so good afternoon Chairman Treyger and members of the committee. I am Patrick McHugh, Vice President of Engineering and Planning at Con Edison. I'm grateful for the opportunity to come before this committee once again to update you on the status of Con Edison's storm hardening efforts. Mr. Chairman, I'm pleased to report to you and the committee members that Con Edison's one-billion-dollar storm hardening program

was completed at the end of 2016. When I came before you in 2015, I recounted the events of October 29<sup>th</sup>, 2012, when Superstorm Sandy struck our region, devastating our communities and our energy systems. As we all recall only too well, this historic.. this storm brought historic flooding and sustained high winds, resulting in outages to over one million customers. The 13,000 men and women of Con Edison, some of whom had their own houses affected, worked diligently around the clock supported by utility workers from around the country until all customers were restored. Almost immediately afterwards, we began developing a comprehensive storm hardening plan. We worked collaboratively with the New York State Public Service Commission, the city, environmental groups, and other stakeholders to find the best way to protect ourselves when another storm hits. Today, we are better prepared, we are better equipped, and we are better trained to withstand the onslaught of another Sandy, thanks to the four year, one-billion-dollar capital investment program for our electric, gas, and steam systems. We have completed storm hardening efforts in communities throughout the five boroughs. Across the board, New York City is a

safer and more secure place because of these investments. These investments have been guided by four principles. One, protect infrastructure from exposure to hazards, such as flooding or, or tree damage. Two, harden components to withstand being affected by a hazard, such as wind, or a falling tree branch or a tree. Three, lessen the impact to the overall system if a component does fail and four, facilitate restoration by doing several things; quickly locate and assess damage, prepare equipment to be restored and improve communication about our restoration plan and progress. The efforts are already paying dividends for the residents of New York City. For example, the work on our overhead system has already prevented more than 107,000 customer outages. Flooding from Sandy caused major damage to the Con Edison's underground electrical infrastructure, particularly in the low-lying areas causing significant customer outages. We have replaced more than 850 pieces of equipment in these flood prone areas with submersible equipment that can withstand flooding. We have also redesigned underground electrical networks using smart grid technologies in areas like the flood.. the flood-prone

parts of Brooklyn and Lower Manhattan. During Sandy, flooded equipment caused outages to customers outside of the flood zone in these areas. Now, streets at higher elevations can retain their electric service during a flood event like Sandy. If major flooding required a system shutdown or a network shutdown in advance, fewer customers would be affected because of these re-engineered networks. To accomplish this and protect our underground systems, we've installed close to 35 underground, submersible isolation switches with remote control capabilities and close to 400 submersible network protectors. By reducing the number of customers served on each segment, feeder segment on the overhead, we minimize the impact when a tree falls and pulls down an overhead line. With our new... with our new system design, fewer customers are affected. We've also improved resiliency on targeted supply circuits, with design changes like stronger poles and more resilient cable. We've taken numerous other steps to avoid outages during major storms. An example... as an example, an overhead line can extend for several miles. We've installed close to 500 smart switches in the city of New York that can identify and isolate a problem

1 instead of affecting an entire overhead line. We've  
2 also installed almost 1,900 electrical devices that  
3 isolate and clear faults on smaller line segments  
4 without taking out the whole line. These  
5 installations make the affected area smaller in  
6 scope. This translates to fewer homes and businesses  
7 losing power during storms. These designs will  
8 improve performance during adverse conditions and  
9 will allow for faster restoration if service does get  
10 interrupted. To further protect critical equipment in  
11 electrical substations and steam generating stations,  
12 we've built more than 3.3 miles of flood walls around  
13 these facilities. Sandy shut down an unprecedented  
14 six transmission substations and 11 area stations.  
15 Salt water caused extensive damage to equipment used  
16 to monitor and operate the electric system. We  
17 reinforced the station perimeter walls and installed  
18 barriers and gates, each Con Edison facility is now  
19 protected from potential flood waters that can affect  
20 station operations. With this program's completion,  
21 21 substations and generation stations are protected.  
22 Additional efforts continue with the East 13<sup>th</sup> Street  
23 substation. Once complete, we will have raised the  
24 Control Room, installed additional high voltage  
25

1 circuit breakers, and completed a fiber optic  
2 protection system, all of it exceeding FEMA  
3 standards. Because of this intricate electrical work  
4 involved, it will be completed in 2019. In addition  
5 to these capital programs, we also are focused on  
6 training and planning for storms. We have trained our  
7 employees in the field with tablets so they can  
8 quickly provide damage assessments. These damage  
9 assessments are electronically submitted to planning  
10 groups that facilitate even quicker, quicker  
11 restoration efforts and repairs. Quicker damage  
12 assessment means quicker and more accurate  
13 dispatching of field forces that reduces restoration  
14 times. We are also working closely with New York  
15 City's Emergency Management, often conducting joint  
16 exercises and seminars. This way, both city and Con  
17 Edison emergency management groups are personally  
18 acquainted. We conduct our drills jointly and both  
19 emergency management teams are present during each  
20 other's drills. And of course, we coordinate closely  
21 with them during actual outage events. Communication  
22 with our customers is critical during storms, and we  
23 have made it easier for customers to contact us.  
24 Customers can communicate with us through texting or  
25



on other social media platforms. They can obtain information about service interruptions more easily through their devices via our outage map. Our redesigned website is easier for customers to use. It is easier to get updates or other information, especially during the storms. A highlighted "Call to Action", posted only during storms makes it easier to see what's important in order to stay safe. During this process, we also have communicated with large customers and building owners about how they can protect... best protect their equipment. It doesn't matter if we have power available to furnish to our customers if they are not in the position to accept it. We have undertaken this process with the knowledge that we all face these challenges together, and we will meet them together. What we have accomplished has made the city safer. It has involved effective collaboration. It has changed how Con Edison works with others. It has provided a new blueprint for the way we will work with others going forward. We've incorporated lessons learned. We have modified design specifications. We are now using new criteria in our designs. All of our... all our activities have been redesigned to meet new

1 challenges. This July, the Staten Island, Con Edison  
2 will begin a five-year program to install smart  
3 meters throughout our service territory. These meters  
4 will provide customers with information about their  
5 energy use. It will help them use energy more  
6 efficiently and save them money. These meters have  
7 the advantage of letting the company know as soon as  
8 a customer is out of service, decreasing the  
9 company's response time and outage duration. Knowing  
10 that we've worked together to make New York City  
11 stronger and safer has been a rewarding task. We know  
12 that there are new challenges ahead. We are prepared  
13 to meet them and support our customers. Thank you and  
14 I'm happy to answer any of your questions.

16 CHAIRPERSON TREYGER: Thank you very much  
17 and just in your closing remarks you mentioned about  
18 the installation of smart meters in Staten Island  
19 this July, that's... so that kind of caught my eye, we  
20 love Staten Island but we also love the four other  
21 boroughs... [cross-talk]

22 PATRICK MCHUGH: Yes... [cross-talk]

23 CHAIRPERSON TREYGER: So what's the plan  
24 beyond Staten Island?

PATRICK MCHUGH: Yes, so the rollout begins in Staten Island, we work our way then around the five boroughs, it's a five-year plan. We hit the Brooklyn... I believe we'll be in Brooklyn in about the second year of the program.

CHAIRPERSON TREYGER: And, and when can Harlem see, see the program?

PATRICK MCHUGH: So... [cross-talk]

CHAIRPERSON TREYGER: So, so my colleague has a... [cross-talk]

PATRICK MCHUGH: ...it's, it's, it's... it's... we start working in multiple areas at the same... you know we start in Staten Island is where the program begins, shortly thereafter we move around we go to Westchester then Brooklyn Queens and then around the boroughs so...

CHAIRPERSON TREYGER: Right and... [cross-talk]

PATRICK MCHUGH: ...and so... [cross-talk]

KYLE KIMBALL: It's, it's also just worth mentioning the reason we're starting in Staten Island is because it's not something we just picked, it's that most of the meters in Staten Island are outside a big part of the... a big portion of the meters are

1 outside so they can be switched out with relatively  
2 little interference with the customer but the higher  
3 density areas like Manhattan, Brooklyn that kind... and  
4 some of the areas in Brooklyn its... it just requires  
5 more interaction with the buildings and the customers  
6 to get... so it... the Staten Island in many ways was the  
7 easiest for us to get off the ground.

9 CHAIRPERSON TREYGER: But, but what kind  
10 of information will be available to customers now  
11 that's not available right now?

12 PATRICK MCHUGH: So, right now a customer  
13 typically would get a monthly reading of how much  
14 energy they used for the month, one data point. The  
15 new meters would give them basically every 15 minutes  
16 how much energy they're using in their household or  
17 their apartment. So, they would be able to if they're  
18 sit... in the house one day and they're looking at how  
19 much energy am I consuming they can see how much  
20 energy they're consuming on a hot day or a cool day  
21 and see what's really running and what's not running  
22 in their house. So, it's not this one data point at  
23 the end of the month that you get a bill, you can  
24 start seeing your usage on a... on a more moment by  
25 moment basis.

CHAIRPERSON TREYGER: Interesting and, and this is a five-year program, is, is there a cost associated with it?

PATRICK MCHUGH: The cost... there is a cost, the cost is approximately 1.2-billion-dollar program... [cross-talk]

CHAIRPERSON TREYGER: Uh-huh... [cross-talk]

PATRICK MCHUGH: ...that includes, you know all the meter installations as well as the communication system and the back-call system to, to implement that.

CHAIRPERSON TREYGER: So, so obviously, the next question is, is that going to be part of a future appeal to... [cross-talk]

PATRICK MCHUGH: ...in a sense... [cross-talk]

CHAIRPERSON TREYGER: ...increase rates... [cross-talk]

PATRICK MCHUGH: ...so that... all, all, all that is in our, our current rates, our current you know rate plan, you know a lot of the... we have a business case that we put forward with the commission, New York City was very intimately

involved as, as mentioned earlier with our... with our rate case and, and the, the business plan for this is there's a lot of savings that come out of this, this initiative. When you look at just reading meters, right, sending people to read meters there's a cost to that, there's customer savings that they now can have an impact on their own electric, you know use and see that and have real time action on it so at the end of the day a large portion of this is actually paid for through savings to the customer.

CHAIRPERSON TREYGER: And, and I think it's... I think it's good to give as, you know real time information to folks as much as possible the one thing I, I would note is that making sure that language access isn't... it becomes an issue in this... in this case making sure that those folks who speak... as a matter of fact at the briefing today the Mayor shared with us that in New York City it's, it's... we have almost 40 percent of New Yorkers now are, are immigrants, right, it's, it's an astonishing growing number and we're, we're proud to be an immigrant city but making sure that everyone, you know is aware and informed on how to... [cross-talk]

PATRICK MCHUGH: Access... [cross-talk]

CHAIRPERSON TREYGER: ...go with the times so is, is there a language access component to this transition?

PATRICK MCHUGH: I don't have all the details but I know... [cross-talk]

CHAIRPERSON TREYGER: Right... [cross-talk]

PATRICK MCHUGH: ...we work with you know in everything we do from bilingual to... you know many different languages, we, we make sure that we can communicate to all of our customers.

CHAIRPERSON TREYGER: Okay. I also just... what just... you know I think recently it was reported that I think last summer or, or recently was the highest I think use of energy... there was a... there was a peak moment where it was like the highest use of energy in the history of New York, is that correct, is there... do we... [cross-talk]

PATRICK MCHUGH: I'm not... [cross-talk]

CHAIRPERSON TREYGER: ...did we approach that... [cross-talk]

PATRICK MCHUGH: ...it might have been a weekend... [cross-talk]

CHAIRPERSON TREYGER: ...in July... [cross-talk]

PATRICK MCHUGH: ...I think we had a weekend peak last, last, last summer we had a weekend peak the highest energy usage on a weekend... [cross-talk]

CHAIRPERSON TREYGER: ...on the weekend... [cross-talk]

PATRICK MCHUGH: ...on a weekend which would be different from a weekday, a weekday peak would be greater.

CHAIRPERSON TREYGER: Can you give us just your analysis, we're, we're entering summer season very soon, a lot of folks will be turning on their air conditioners... [cross-talk]

PATRICK MCHUGH: Yep... [cross-talk]

CHAIRPERSON TREYGER: ...and the Mayor plans to install AC's in all schools in the next couple of years, do we... I'm sure Con Edison is, is, is aware of that are we set this summer as far as... [cross-talk]

PATRICK MCHUGH: Yes... [cross-talk]

CHAIRPERSON TREYGER: ...as far as energy capacity?

PATRICK MCHUGH: So, our... so the energy capacity just from a generation perspective handled



1 by the New York ISO so we, we have the energy  
2 capacity to meet our energy needs for the summer. We  
3 do a whole lot... summer preparation, our summer  
4 preparation we are ready, you know for the summer  
5 period. We do individual load analysis, are, are  
6 energy studies around... for every section of the city  
7 to make sure every section of the city is built and  
8 constructed to meet the expected load growth and... you  
9 know the load demand and the energy consumption in  
10 that area.

12 CHAIRPERSON TREYGER: So, you're saying  
13 that, that you're set for the summer?

14 PATRICK MCHUGH: Yes.

15 CHAIRPERSON TREYGER: I also just want to  
16 take a moment because you mentioned in your testimony  
17 as well and I think it's worth emphasizing and, and  
18 giving the full public appreciation to the amazing  
19 Con Edison workers that did an incredible amount of  
20 great work in the recovery of post-super storm Sandy  
21 and as you mentioned many of them were impacted  
22 themselves, their families and they went out of their  
23 way, out of... really out of their way to help their  
24 neighbors and friends recover from the storm so I do  
25 want to publicly thank Con Edison and, and their

employees for, for that... for that work and I've heard that from my colleagues, I've seen it myself so I do want to... I want to note that.

PATRICK MCHUGH: Thank you.

CHAIRPERSON TREYGER: Does Con Edison have a position on the Indian Point closure?

PATRICK MCHUGH: We do not take a position on the Indian Point closure. We, we continue to work if it... you know if it does close this is not new to us, the discussion of it closing is something that has been ongoing for many years. Back in 2013 there was a, a public service commission hearing on, on the topic, the proceeding out of that came as mentioned earlier there was... out of that came, you know plans to address if it was to close we, we, we are active participants in that to making sure we can secure our system, out of that came three transmission projects which were done, you know around New York State which allow us to bring in more energy into New York City post those projects which are completed, those three projects are completed. We also worked with energy efficiency so we had a, a bigger push, more dollars spent in energy efficiency trying to not only be able to bring in more but could

we reduce load enough so... and that was part of that proceeding to do both of those things.

CHAIRPERSON TREYGER: So, what is your... from, from your angle, from your... from your viewpoint what impact will its closure have on the city of New York with regards to energy supply and capacity?

PATRICK MCHUGH: So, you know as we mentioned the loss of it would require new sources of energy to, to come and they mentioned earlier there were two other power plants that are, you know in the process or in the stages of being constructed, we also see energy efficiency around the city, you know there's projection of where the energy growth is going to go to, energy efficiency is now becoming... you know you can say shutting off the light is one way of energy efficiency but also you know LED lightbulbs, you can't go into a store and buy an old lightbulb, right, you know an old incandescent lightbulb, they don't exist so people are just naturally putting in energy efficiency stuff, the equipment they're buying and their air conditioning it is really come wholesale so you're seeing as people just do natural stuff in their homes that their energy usage is, is declining or being reduced.

1 So when you look at the forecast of that, you look at  
2 the transmission lines, you look at other energy  
3 efficiency programs is it going to be... you know it...  
4 there's, there's still risk both ways but I think  
5 there's going to be a need for the ISO to make sure  
6 these transmission capacity continues to improve, I  
7 would also add that the other thing that you can't  
8 predict, I think we just... earlier is the distributive  
9 resources, right, so as you've seen around the  
10 country we talk about solar, solar continues to grow  
11 and as it grows in New York City it's doubling every  
12 year, you're looking at battery storage, right,  
13 battery storage and I think we're going to hear later  
14 from some more battery storage is that technology is  
15 coming, timing of it is hard to predict but the  
16 ability we're working to get that, you know able to  
17 be safely installed in New York City buildings and if  
18 you... and if we can get that technology in that's  
19 going to have a great impact on the amount of energy  
20 we need to bring in on a peak day, I mean we can  
21 bring it in at night and, and store it, it's going to  
22 have a major impact on the amount that needs to come  
23 in at that, that peak day.

CHAIRPERSON TREYGER: Right but you know as you mentioned that, you know I, I agree that many New Yorkers are developing I think better habits as far as energy efficiency but you mentioned that this past weekend... this, this... I'm sorry, the last summer so one weekend we had such a peak, peak demands so demand is not... you don't see demand just overall slipping, you, you're seeing some historic peaks of demand in, in our energy usage and so obviously, that, that, that... we have to figure this out. Now what is your viewpoint on the impact, the, the closure because I did not hear a definitive answer about making up the gap, everything is sort of we'll see, we'll... hopefully this plant will be built by then, hopefully this plant will be in operation by then and I'm not hearing definitive answers today but what is the impact on rates that New Yorkers will be paying for energy with the closure of Indian Point?

PATRICK MCHUGH: So, I will reiterate a little bit what was said earlier, we, we buy the energy from the market so we... [cross-talk]

CHAIRPERSON TREYGER: Right... [cross-talk]

PATRICK MCHUGH: ...are not a power producer... [cross-talk]

CHAIRPERSON TREYGER: Right... [cross-talk]

PATRICK MCHUGH: ...we buy energy from the market, the market is... you know will be impacted by a number of things going, going forward not just Indian Point, it's the, the price of commodity, the price of gas, the... how well batteries come in, you know batteries can, can have a major impact on the price of the commodity going forward and the implementation of solar will also have during those peak periods have a major impact. New generation coming online, you know you would think newer, more efficient better, better pricing would also challenge some of the older generators. So, I'm not here to predict... you know I, I wouldn't... I wouldn't go with my prediction on whether prices will go up or down but it will be something that we need to aggressively watch and plan for year by year as we get closer and closer to, to the closing.

CHAIRPERSON TREYGER: You heard me ask the administration about... you know with regards to let's say the, the off-shore wind farms that are... there's a vision for that and there's, there's some plans for that or goals for that does that actually... I mean again I support renewable sources of energy, I

1 think we're... we have to... we have an obligation to  
2 move in that direction but how do we ensure that it  
3 does not disproportionately impact those folks who  
4 could really could least afford to be impacted any  
5 more, does it... does it translate into lower cost for  
6 people, that's the... that's... and from your industry  
7 standpoint I'm very curious to hear your answer?

9 PATRICK MCHUGH: So, I would speak to,  
10 you know what... how I think about it is along the  
11 lines what was discussed that the first couple of  
12 people involved are going to pay the higher price to  
13 get the technology going, to get the, the, the  
14 assembly line moving, right, so the first one in to  
15 build something or do that those prices are going to  
16 be bigger, there's going to be learning curves,  
17 there's going to be businesses to be set up and then  
18 the question is, is where, where do you jump in on  
19 that curve as the prices come down, you know if  
20 you're first in you're going to be paying the higher  
21 price somewhere along the line it's going to  
22 continue... those costs will continue to come down is  
23 the belief, I mean that's, that's typical of business  
24 practice that the, the more you do with the more  
25 businesses involved the prices will come down but

right now why I don't think... as you mentioned earlier ten years people have been talking about it the prices are still pretty steep although they've come down the prices are still pretty steep when you compare it to traditional generation available.

KYLE KIMBALL: The one thing that's important also to say is that something Anthony said... Anthony Fiore from DCAST said earlier was that and one thing that's not going to change with wind or solar is the market mechanism isn't going to change so the idea that there's still a clearinghouse at the lowest price will... that's not going to change with the advancement of, of, of renewable energies so what really has to happen for renewable energies to be competitive in those... in those markets is they have to be... they have to receive subsidies and different agreements in order to have power off take in order to keep their prices low. So, what really has to happen is on the frontend in the development of these renewable resources so that when they are dispatching into the market to the New York ISO that they are winning, winning that market and able to dispatch that power.



CHAIRPERSON TREYGER: Right and I, I

just... my concern is that there's going to be a cumulative impact on, on, on folks in New York because you're going to couple this increase in, in the initial phases of this and how long the initial phases are to be determined plus as I mentioned before FIMA is within, within a year or two away from finalizing maps which is going to mandate more New Yorkers to purchase flood insurance and at higher rates by the way and you know the cost of food, the cost of living continues to go up so there's a cumulative impact here and that's very, very concerning and so I think that government and the private sector really have to figure out ways on how to mitigate these impacts on, you know working families and, and... particularly the most vulnerable communities so I, I, I think this, this has to be examined now and as we heard before from the administration some of the biggest costs are taxes and fees attached to these things and so we have to... we have to really address this. I know my colleague; Council Member Margaret Chin has a question and I want to turn it over to her.

COUNCIL MEMBER CHIN: Thank you Chair. My question to Con Ed is that I know you... you know you... your focus on distributing the energy but are you doing... I mean are you helping to sort of promote the reusable, renewable energy like solar and... I mean especially solar panels, are you helping customers kind of like install or like get them interested...

PATRICK MCHUGH: So I would say the... from an engineering perspective and design perspective we work, you know very hard... that we work to try to make it as easy as possible for customers to be able to select an alternate, you know distributive resource and be able to bring it in and connect it and connect it into the system. So, we continue to work year over year to work on any, any problems or any issues that customers are facing and take that feedback and make it easy for them to, to use this technology. So, we do it from that regard, we as a company we support solar, we support the environmental, we, we, we don't try to fight, you know we believe that's the way it is going, you know that this is the way the energy industry is going and we support it, we embrace it and we are trying to make it easier for our customers to use the technology.

KYLE KIMBALL: And just a couple of examples of this is so Patrick's talking from the engineering side and, and, and from the company culture side... and I think our actions in... on the policy side we have a number of different demonstration programs that are really focused on working with the communities, low income communities and having... and making sure that those communities can access... because there's some very unique challenges with renewable energies in this city for... but not only for the building environment but for the economic environment and so there's a number of demonstration programs we have that are sort of demonstrating ways that you can bring solar to communities, ways that you can bring electric vehicle charging to communities, ways that you can work within communities to lower infrastructure investments that we might otherwise have to make to advance microgrids or a number of different things like that. So, so there's a lot of different programs we have inside Con Ed on our policy side that are helping to demonstrate the, the promise of renewable energies to all the communities around the city.

COUNCIL MEMBER CHIN: Yeah, I think we... it'd be great if you could kind of share that information with us in the council so that we can also, you know make sure that that information gets to communities that we serve. One of the, the issue is that with the public housing, with NYCHA, right because a couple of months ago I had one building where all the elevators wasn't working and it's because of the electricity, you know there was a shortage of... it was a electricity problem and that's why they couldn't run the elevator and so in the long run, I mean some of the, the building will be getting a generator because of what happened after super storm Sandy but not all of them but the whole thing with solar energy, I mean imagine if every NYCHA development can generate their own power or at least for critical services like elevators that is something that, you know we can... you can work together with NYCHA as, you know your public policy and to really help the community especially, you know with the vulnerable population and the growing number of seniors in public housing that we cannot afford to have an elevator breaking down because of an electricity problem. So is that something that, that

you can, you know begin to at least work with NYCHA...  
[cross-talk]

PATRICK MCHUGH: Well... [cross-talk]

COUNCIL MEMBER CHIN: ...or have you  
started working with them?

PATRICK MCHUGH: Yes, so we work closely  
with NYCHA, we, we want those elevators working, you  
know very much so, so we, we not only work on our  
system to make sure that our system can support those  
elevators going on, we've also recently introduced a  
new policy where we inspect the, the service holes  
that service the NYCHA facilities on a more periodic  
basis than, than we do the rest of the facilities. We  
also work on them with their internal so, so we fill...  
supply a NYCHA development and there's a lot of  
internal wiring and we want... we work with them from  
our technical knowledge on what issues they may be  
having on their side so, so we try to approach it  
from three ways to again reduce the impact of an  
elevator going out of service. The other thing I'd  
like to say just from the solar side and why we... also  
the batteries that tie in here, solar will not work  
in an outage the situation, the way the solar  
technically works is the solar systems that are

1 designed today match the, the, the energy system that  
2 it connects to. So, if the solar... if you lose power  
3 to your house and you have solar on the roof you  
4 can't run your house, your, your house is, is out of  
5 power. The solar... the inverters are technically not  
6 able to work really where it comes where you can get  
7 that island... that like operate as an island comes in  
8 if you connect a battery system to it and so that's  
9 why you hear... you've heard some talk earlier about  
10 this solar battery connection, the battery does a lot  
11 of great things for the system as well as for solar  
12 so battery technology is something we, we all  
13 continue to push and think will be a, you know a... you  
14 know very good for, for the whole system and for, for  
15 the environment once we can get the technology safe  
16 to put in the buildings.

18 COUNCIL MEMBER CHIN: Just a question for  
19 my own interest, so is this battery thing is it  
20 better than generators?

21 PATRICK MCHUGH: So, batteries is, is  
22 just storage of energy, right, so most people... most...  
23 many people think that the electric can be stored  
24 somewhere, right, so energy is... electrical energy is  
25 used the moment it's created, there's no... the

1 generators that are generating all around us are  
2 meeting the load, you know second by second of what  
3 people are using, there's no storage of it, it's not  
4 like natural gas storage or other commodities you may  
5 have a storage capability of it, batteries are the  
6 storage for electricity and large scale batteries  
7 that are priced... right, right now there... those exist  
8 they're just too expensive, large scale batteries.  
9 So, trying to drive those costs down, there's a lot  
10 of initiatives throughout the state and throughout  
11 the country to drive down the cost of batteries and  
12 with that if you can drive the cost down and have  
13 safe to put in... inside buildings you'd really see a  
14 dynamic change in the whole electric equation, the  
15 electric equation.

17 COUNCIL MEMBER CHIN: Yeah because like  
18 right now, I mean the, the thing that people are  
19 looking at is oh every, every building we want to  
20 have a generator just in case if the, the power goes  
21 out, every tall building in my district they say we  
22 want a generator but if this is something that could  
23 be a positive alternative, you know it don't take up  
24 as much space and its cleaner energy, wow, I mean  
25

2 that is something that we definitely should... [cross-  
3 talk]

4 PATRICK MCHUGH: So, so the one thing  
5 with generators that you need to realize is  
6 generators are, are an O and M item, you, you don't  
7 put a generator in and then wait two years to use it,  
8 you know your... probably it's not going to work, you  
9 need the generator running and if you're running it  
10 then you need maintenance so there's a cost that you  
11 need to have in, in running a generator so something  
12 to think about when people saying they're... we're  
13 putting it inside the building if you're going to use  
14 it as an emergency backup that's fine, you've going  
15 to need a maintenance cycle, you're going to need to  
16 change parts, you're going to need to do upgrades on  
17 it so just something to think about as, as people  
18 think of their resiliency, where batteries are, are...  
19 batteries are like you think of batteries in your...  
20 that you use they're much lower maintenance type  
21 items.

22 COUNCIL MEMBER CHIN: Thank you Chair, I  
23 think we probably could follow up more on this  
24 because this is very interesting, I mean I'm looking  
25 forward to hearing about batteries but... because



1 that's what, what after Sandy, I mean that's what all  
2 the buildings is like we want to have our own  
3 emergency generator and that's... if there's a better  
4 way than that then we should definitely start looking  
5 into it but you know the, the other issue about, you  
6 know the efficiency, conservation those are very,  
7 very important and we need to also make sure that the  
8 private sector, the office building, you know the big  
9 department store they also got to be doing their part  
10 to help conserve energy and not leave the door open  
11 with the air condition running. Thank you, thank you  
12 Chair.

14 CHAIRPERSON TREYGER: Yeah, I, I got a  
15 little bit more nervous Council Member because, you  
16 know as part of the FIMA funds for the NYCHA impacted  
17 buildings that were hurt, hurt by Sandy they agreed  
18 to fund backup generators on the roofs of our NYCHA  
19 buildings and, and I, I don't think I heard anything  
20 about maintenance funds attached to those funds and  
21 you're telling me that, that will be necessary and  
22 so... I mean it makes sense because everything needs  
23 maintenance and that is not something I heard from  
24 NYCHA and knowing NYCHA and there's other... there's  
25 going to be cost with all these types of things and

1 so... yeah, I mean that is very concerning and so I  
2 take it that you have briefed the city about your  
3 recommendations or what you feel is... as far as these,  
4 these battery storage things, I mean has the city  
5 asked for your opinion about these... about these  
6 things... [cross-talk]

8 PATRICK MCHUGH: So, I would just what  
9 Anthony alluded to earlier we work with the city...  
10 [cross-talk]

11 CHAIRPERSON TREYGER: Right... [cross-talk]

12 PATRICK MCHUGH: ...in trying to get the  
13 battery manufacturers to be able to install the  
14 batteries that they develop into the buildings and  
15 meet all building code and fire code so right now  
16 they're... you know so we want to... it's a very dense  
17 city and we want to make sure and the, the city all,  
18 all players in the city want to make sure that we're  
19 putting something in that it is not a hazard to the  
20 people in, in the... in the buildings.

21 CHAIRPERSON TREYGER: But is there any...  
22 what is... what is... what are all of the push back  
23 factors, what are the concerns with these things?

24 PATRICK MCHUGH: So, one of the leading  
25 concerns is... there's other concern, leading... lithium

ion batteries, you know we, we had some bet... a lot of media attention with the... with the phones, right, so you saw those they would have... [cross-talk]

CHAIRPERSON TREYGER: ...uh-huh... [cross-talk]

PATRICK MCHUGH: ...not built properly or made in certain ways, they can... they can become combustible, you also saw it with some of the, the scooters, right, you had the scooters where you have the, the battery systems in them if not made properly or made a certain way can ignite and cause a fire. So, we want to make sure that the battery systems that are installed in buildings meet certain design criteria. The fire department if they are to catch fire it can fight the fire, you know those types of issues. So, we are working through those with all the city agencies to make sure everything that's put in is safe to the public.

CHAIRPERSON TREYGER: But have there been any manufactured batteries used in any city around the world so far that we're not seeing these types of incidents where there's some good reputable company or any... [cross-talk]

PATRICK MCHUGH: So, there are some, you know so, so that's what we're working through, what are those reputable manufacturers presently right now buildings in the city use batteries in their building, there, there are... there are customers who have lead at... you know a different type of chemistry, you know lead acid battery, they put those batteries in their basement and they use their batteries to help off, offset their energy costs and you know can be used in an outage situation and, and they use them for different situations. Now lead acid is the old battery system which is... you know which you... there's newer technology, much more dense amount of energy available but it brings in different issues and it's really right now what is the best chemistry to use in the future batteries in buildings and there's a lot of competing literature on what's the right thing to use at what cost.

KYLE KIMBALL: I would also say that the city has been a great partner with us in advancing on a number of different... you know through the process of Department of Buildings, through FDNY, they understand potential firefighting techniques as, as Patrick mentioned or off gassing in case there is a

fire. We, we, we partner with the city and done... and private manufacturers and done a, a lot of testing at the request of... and sort of stress testing of the, the batteries at the request of Department of Buildings and FDNY so it's, it's, it's a conversation that's happening and that FDNY and Department of Buildings are taking very seriously as they should and... but there is no... I would not call... characterize it as anything of a slowdown just something being taken very seriously but also a recognition that this is a big part of the city's energy future.

CHAIRPERSON TREYGER: But it also tells me that, you know certainly we have to explore every, every concern and, and also explore every, every avenue of, of, you know again renewable sources that are safe and cost effective and good for the planet but I know for example this might have the potential to create new market where folks who are let's say producing or restoring energy can now in theory try to even sell that energy elsewhere, is that correct?

PATRICK MCHUGH: Uh-huh... [cross-talk]

CHAIRPERSON TREYGER: ...because I also know... I'm aware that there's certain... there's certain housing complexes that after super storm Sandy are

building kind of like generators on their... on their grounds and actually considering seeing if they could power not just their buildings but they could power nearby other buildings or, or hospitals, are you aware of that?

PATRICK MCHUGH: So, we're working on a number of initiatives, the state wanted initiatives... [cross-talk]

KYLE KIMBALL: Solar progress... [cross-talk]

PATRICK MCHUGH: Solar progress but also for the NY Prize is a statewide initiative where we're looking at building micro grids around the state where... in, in, in this condition of an outage that a local generator could combine... could come online and pick up a certain amount of blocks or people outside their own customer, you know their own building and we would design the system so that, that generator could come on and feed a certain population of customers.

CHAIRPERSON TREYGER: And is that happening in New York or are you're still in the exploration... [cross-talk]

PATRICK MCHUGH: So, that is... it's, it's happening so it started out with a, a request for proposals from, from, from people and those requests were... I don't know there was several hundred requests I think initially then it was a certain number that was selected to go to the next stage and then from that then there was more technical assessment, evaluation done and now we moved to the next stage where we're now more detailed assessment done of those so that, that is in progress right now. We have a couple of them being looked at around the city.

CHAIRPERSON TREYGER: Can you share where... [cross-talk]

PATRICK MCHUGH: I don't... I can share that with you, do you...

UNIDENTIFIED FEMALE: There's three projects that were awarded one million dollars... [cross-talk]

CHAIRPERSON TREYGER: If you could speak to the mic, I just want to... just introduce yourself.

PATRICK MCHUGH: Okay... [cross-talk]

UNIDENTIFIED FEMALE: There's three projects that have been awarded one million dollars each by NYSERDA to do detailed engineering and design

2 over the next course of the year as well as make the  
3 project essentially third party financeable  
4 essentially justify the business case for those  
5 projects and those three are Amtrak was one of them,  
6 they're looking at... [cross-talk]

7 CHAIRPERSON TREYGER: They need it...  
8 [cross-talk]

9 UNIDENTIFIED FEMALE: That's correct,  
10 they're looking at investments at Penn Station and...  
11 [cross-talk]

12 CHAIRPERSON TREYGER: They need it...  
13 [cross-talk]

14 UNIDENTIFIED FEMALE: Sunnyside Yards,  
15 Clarkson Avenue which is a project that NYPA and  
16 Burns Engineering is working on, that's looking at  
17 providing resilient energy to three hospitals that  
18 serve over one million patients per year and that's  
19 also in the BQ Dam zone and then also East Bronx  
20 which is... actually three hospitals in Clarkson Avenue  
21 and East Bronx is four hospitals; Weiler, Jacobi,  
22 Albert Center... Albert Center, Einstein College of  
23 Medicine and Calvary Hospital. The Clarkson Avenue  
24 hospitals are King County Hospital, Kingsborough  
25 Psychiatric Center and SUNY Downstate Medical Center.



1                   The Amtrak project will provide also resilient energy  
2                   in... at least in the current form to potentially two  
3                   schools to serve as an evacuation shelters and the  
4                   other projects also have community resiliency  
5                   benefits as was part of the requirement for the  
6                   NYSERDA New York Prize Program.  
7

8                   CHAIRPERSON TREYGER: Are, are you  
9                   familiar... and thank you for that information and... but  
10                  are you familiar also in Southern Brooklyn, Warbasse  
11                  Houses that is building an elevated generation plant  
12                  post Sandy that is producing energy that could be  
13                  more than sufficient for their buildings, are you  
14                  familiar with, with this project?

15                 PATRICK MCHUGH: Not, not off hand.

16                 CHAIRPERSON TREYGER: Okay, I'd like to  
17                 make a follow up with you afterwards because they are  
18                 looking to be partners in the community, you know  
19                 beyond Warbasse and after Sandy they've learned a  
20                 lot, invested a lot and they're building an elevated  
21                 plant that could produce energy beyond just, just  
22                 their buildings, I mean nearby is Coney Island  
23                 Hospital for example which is a, a key hospital in  
24                 our community.  
25

PATRICK MCHUGH: So, again I, I heard of it, I don't know the details of it so you know I don't... I don't... more, more than what you're saying I don't know any more details right now about that so we could follow up on that.

CHAIRPERSON TREYGER: Okay, very good and... [cross-talk]

PATRICK MCHUGH: I would also just say one more thing with the batteries, we are... so not only are we looking for customers to install batteries as part of the BQDM program we're looking to install large utility scale, scale batteries at some of our facilities so we're looking at two 12 megawatt hour batteries at two of our facilities in the BQDM area. So again just... again bring along the battery technology.

CHAIRPERSON TREYGER: Do my colleagues have a question, Council Member... [cross-talk]

COUNCIL MEMBER PERKINS: Just wanted... just wanted to quickly... the, the batteries they don't... they, they don't break down or explode or leak or any other kind of... [cross-talk]

PATRICK MCHUGH: So... [cross-talk]

COUNCIL MEMBER PERKINS: Are you aware...

[cross-talk]

PATRICK MCHUGH: ... I mean... so, so, so the... so batteries will work like battery... you know it's just larger scale of the batteries you know, right, so batteries... [cross-talk]

COUNCIL MEMBER PERKINS: ...Right... [cross-talk]

PATRICK MCHUGH: ...these are rechargeable batteries so there's a lot of different chemistries out there, a lot of different technologies working at what's the best at the lowest cost but they, they over time they don't perform as well so there is a curve where they perform... produce... you know they're able to charge less and less but that's over years but the, the concept is, is that they're pretty much very low maintenance, you know you, you charge them at night and you discharge them during the day is pretty much how they would work, low maintenance item, there's no spinning machines and, and... you know moving parts, you know it's all chemistry moving so, so the, the, the typical maintenance of them again these haven't been mass deployed yet so again a poor manufacture could, could create a lot of problems but

2 with the concept it seems like it would be a very low  
3 maintenance and a, you know very helpful for the  
4 system.

5 COUNCIL MEMBER PERKINS: But I'm... what  
6 about risk, I'm just... any, any risk factors that need  
7 to be... like... you know... [cross-talk]

8 PATRICK MCHUGH: So, I think the risk is  
9 what we're working on with the city is... the, the risk  
10 would be, you know if they were to fail and how do  
11 they fail and what's, what's the risks and how do we  
12 deal with them. So... and that's, you know Department  
13 of Buildings, the Fire Department and ourselves very  
14 much engaged in fully understanding that as we move  
15 forward.

16 COUNCIL MEMBER PERKINS: But, but I'm  
17 trying to understand when do you... how do you  
18 determine how, how risky it is or not is what I'm  
19 saying, do you understand... [cross-talk]

20 KYLE KIMBALL: So, we've, we've... we can...  
21 I think we can share, I think it might be... I, I think  
22 it's a public study that was done that saw the  
23 incidences of failure very, very low... [cross-talk]

24 COUNCIL MEMBER PERKINS: ...good, uh-huh...  
25 [cross-talk]

1 COMMITTEE ON RECOVERY AND RESILIENCY 109

2 KYLE KIMBALL: ...and I would say that our  
3 work with the Department of Buildings and FDNY...  
4 [cross-talk]

5 COUNCIL MEMBER PERKINS: So, when it's  
6 low at all how risky is... [cross-talk]

7 KYLE KIMBALL: I don't know the number  
8 that we can... we can share, I can share it... [cross-  
9 talk]

10 COUNCIL MEMBER PERKINS: Okay... [cross-  
11 talk]

12 KYLE KIMBALL: ...but it's, it's... it was  
13 enough for the FDNY to move on to, to not stop it  
14 there but to say okay so in the off chance that it  
15 does... there is a fire how do we actually fight those  
16 fires. So, it's moved on to the implementation stage  
17 of the study but we can... we can share that with you.

18 COUNCIL MEMBER PERKINS: But the Fire  
19 Department you said are using these batteries?

20 KYLE KIMBALL: No, they're, they're,  
21 they're just... we're working with them to understand  
22 how if they were to catch on fire how they would  
23 fight the fire.

24 COUNCIL MEMBER PERKINS: And... but who is  
25 using the batteries?

PATRICK MCHUGH: So, I, I had mentioned  
there are customers... [cross-talk]

COUNCIL MEMBER PERKINS: Uh-huh... [cross-talk]

PATRICK MCHUGH: ...I don't prefer to, you  
know there's different customers around the city who  
are using older technology batteries which is lead  
acid, the typical old technology batteries, the lead  
acid battery type of battery since the 1960's have  
been out there and you can build it in, in a  
chemistry lab, right and so... and people have been  
able to use those effectively, customers are built on  
demand charges, right, especially commercial  
customers, they... they're, they're demand how much  
they use it in the peak of their day impacts their  
cost so many have... not, not many but there are a  
number who, who have said, you know I could put a  
battery in, charge it at night and then when my  
demand comes up during the day I discharge my battery  
and then therefor my demand charges... the, the actual  
demand of this building is not this, it's kind of a  
flat... a flatter demand, which we would look to, you  
know overall the best system for the system we have  
this peak day, energy goes down at night, peaks

1 during the day, energy at night and if you could  
2 shave some of the peak during the day and move it to  
3 at night would, would help the system, it would help  
4 with a lot of the issues we've discussed today.

5 UNIDENTIFIED FEMALE: So, DCAST is  
6 piloting a series of battery projects is what... and  
7 then also there's a project that's underway at the  
8 Marcus Garvey Houses that's putting together a solar  
9 plus storage plus fuel cell micro grid that would  
10 serve that affordable housing complex. So, it is  
11 happening in the city but slowly given the issues  
12 that everybody has mentioned.

13 CHAIRPERSON TREYGER: Well and the  
14 question I would have is that if NYCHA is going to  
15 create these kinds of energy storage systems enough  
16 to fuel their buildings but is NYCHA in a position to  
17 then also sell that energy?

18 PATRICK MCHUGH: So, the market's the... so  
19 you can sell it into the market, right, so... you know  
20 people would have to evaluate the cost of that, you  
21 know so you're going to buy energy at night and try  
22 to sell it during the day so it's a different  
23 business model, most people aren't... sorry, most  
24 people... you know it's, it's a business model so I  
25

2 don't know if NYCHA or, or people in general saying  
3 am I going to build the battery to sell into the  
4 market or am I just going to offset my peak demand  
5 and therefor I save money and I invest in a battery,  
6 I save money on my peak demand, it works for me and I  
7 also get the resiliency that if I lose power I got a  
8 battery backup.

9 CHAIRPERSON TREYGER: I mean look, this  
10 has to be carefully thought through but if, if, if  
11 this project has the potential to power up the NYCHA  
12 buildings adequately that's first and foremost and  
13 these... [cross-talk]

14 UNIDENTIFIED FEMALE: [off-mic]

15 CHAIRPERSON TREYGER: Oh, I'm sorry...  
16 [cross-talk]

17 UNIDENTIFIED FEMALE: ...[off-mic] a  
18 separate affordable housing... [cross-talk]

19 CHAIRPERSON TREYGER: ...it's a separate  
20 affordable... [cross-talk]

21 UNIDENTIFIED FEMALE: ...[off-mic] yeah...  
22 [cross-talk]

23 CHAIRPERSON TREYGER: ...housing project...  
24 [cross-talk]



UNIDENTIFIED FEMALE: ...[off-mic]... [cross-talk]

CHAIRPERSON TREYGER: But, but NYCHA in theory could apply this type of idea, I'm just thinking out loud and potentially I... it's something that I think that... look especially in this day and age you have to explore these types of options. Do any of... any, any other questions from my, my colleagues if not, you know there's, there's still quite a bit to follow up about and we look forward to continuing our partnership with Con Edison, thank you very much for, for your time.

PATRICK MCHUGH: Thank you.

CHAIRPERSON TREYGER: Alright, I'd like to call up the final panel. Richard Webster and John Cerveney. Okay, you may begin.

RICHARD WEBSTER: Hello, I'm Richard Webster from Riverkeeper. I first want to thank you for the opportunity to come here and provide some input of the community. We, we appreciate the important issues that you're considering and we're very pleased to offer some input for you. In January this year, Riverkeeper joined the state both Governor Cuomo and Eric Schneiderman when the AG entered into

an agreement with Entergy Corporation to close the Indian Point Nuclear Power plant in 2021. Entergy has already shortened its licensing request to the NRC to reflect this new closure date. Unfortunately, that doesn't mean that the safety problems that Indian Point's been having are over, there's been an endless stream of crisis faced by the plant over the last two years including an unprecedented, unprecedented approach of failed bolts in the core of reactor number two, a spate of unplanned shutdowns, radioactive leaks, fires, and explosions. Most recently just a couple of weeks ago Entergy's rosy forecasts that reactor three would not have the same problems with failed bolts as reactor two had proved false. New information showed that more bolts in reactor three had, had proved faulty and needed to be replaced. So, this is an ongoing safety problem, we got lucky for quite a while, there was some incidents but none of them resulted in a major problem. We finally got smart and decided to take away the source of the risk. In addition to a safety risk, Indian Point has a... huge impacts on Hudson River ecology through its cooling system and causes leaks of radioactive materials into the Hudson. So, the

closure not only removes a, a huge safety risk, it removes a, a large environmental impact but it creates some opportunities for us to pivot forward to affordable, reliable, resilient, and sustainable power for New York City. To look at this issue of, of replacement power which I think is... has been on your mind today NRDC the Natural Resource Defense Council and Riverkeeper have commissioned a series of reports from a... one of the nation's leading energy consulting firms, Synapse Energy Economics discussing the, the feasibility of closing Indian Point. We had a report in 2011 and 2012 and then most recently in February of this year we released a third study called Clean Energy for New York which is available on our website, everybody can read it, I would... I would urge you to have a look if you have concerns about this. This report is an expert finding that confirms that... it confirms that previous findings that Indian Point can close without negative impacts and in fact it shows that it's becoming easier and easier to close Indian Point because of the kind of developments that we've been talking about earlier today in this committee. We've got... wind and solar energy prices are, are going through the floor, power transmission

as we've heard has been improved and there's a flattening of demand for grid based power due for two factors. One is that there's energy efficiency coming in and the other is we've heard they were behind the meter of solar generation which is... and just to be clear with solar generation what's happening is on peak days because solar generates on peak days, it serves a peak loping function and so actually what that's been able to do contrary to some people's expectations is bring down the average price of, of energy because the prices peak up very high on those... on those high demand days. So, renewables have been a, a win, win and we're expecting more wins in the future. Indian Point generates about 10 percent of peak summer demand in the... in the New York City area. The report looked at six different replacement scenarios and showed that there are multiple ways in which the energy that Indian Point is currently generating or at least generates most of the time while it's not on, on a refueling outage or some kind of unplanned schedule... unscheduled closure can be made up through a, a variety of different strategies. One approach is the... bringing the hydro power and wind power from Canada through the Hudson Power

Express high voltage pipeline that's ready to go but the question is, is there demand for it and I guess the, the market will tell us that but what the market signal is telling us now is that this transition away from Indian Point will not have any major impacts on our energy system. Since my time is done I will... I'll wrap up very rapidly. Basically, energy efficiency, we think there's more we can do there, it's already having an impact as we heard but we think we can... we can improve on energy efficiency. Energy efficiency has many virtues, it's cheap, it generates jobs, it's green and it more... most importantly perhaps the impacts are... the positive impacts are local. So, we get jobs in the city and we make sure that we don't have to bring in more energy from, from elsewhere. The rest of the, the testimony basically outlines why currently in New York State we're not doing quite as well as some other states and of course we, we believe that New York State should be a leader in everything so therefor we believe that we can... we can improve our energy efficiency by about... by about three times and if we do that we will realize many benefits and we, we urge this, this committee to, to

push the administration to do that so thank you very much.

CHAIRPERSON TREYGER: Thank you, next and, and afterwards we'll have a chance to ask some Q and A but we thank you.

RICHARD WEBSTER: Okay, great, thank you.

JOHN CERVENY: Chairman Treyger, members of the committee pleased to be here today. My name is John Cerveney, I'm with the New York Battery and Energy Storage Technology Consortium or New York-BEST. We were formed in 2010 as an, an activity of New York State, they invested funds to create New York-BEST and to help to grow and catalyze the energy storage industry in the state and to establish the state as a global leader in energy storage. Our work is focused in four primary areas; we act as an authoritative resource on all things energy storage. We work to advance and accelerate the commercialization process for energy storage technologies. We educate policymakers and stakeholders about storage and we promote the world class intellectual and manufacturing resources in the state and help to provide access to the markets that are emerging as we speak. New York-BEST has about 160

member organizations that come from industry, academia, government, and the nonprofit sector, we work with them and with other interested stakeholders to achieve our mission. We invite interested organizations and, and individuals to join us in growing a successful and thriving storage industry in the state. As we've heard in previous, previous testimony today the, the electric grid in the state faces a number of challenges. New York households pay, pay well above the national average in annual energy costs and face some of the highest electricity rates in the country. The state's grid infrastructure is aging and the transmission industry and distribution systems are increasingly being stressed by new demands placed on the system. Events such as major storms and heat waves further exacerbate these vulnerabilities. In addition, the imperative to reduce greenhouse gas emissions and address the threat of climate change is driving the transition away from fossil fuel sources toward clean renewable energy. Thankfully, New York State and New York City have taken a number of steps to address these challenges. The State Energy Plan sets aggressive goals for reducing the state's greenhouse gas

emissions, 40 percent by 2030 and 80 percent by 2050 and generating 50 percent of the state's electricity from renewable sources by 2030. New York City is a world leader in your efforts to build a stronger, more sustainable, more resilient, and more equitable city as embodied in the plans together that comprise OneNYC. In 2016 and I'm telling this to the... preaching to the choir but the, the city committed to deployment of 100 megawatt hours of energy storage citywide by 2020 and in doing so became the first city in the country to set a, a deployment target for energy storage and we thank you for that. To quote the 2017 OneNYC update, "this target will help reduce reliance on the grid by making variable sources of energy production such as solar panels, usable for more of the day. Energy storage also helps increase the city's resiliency by providing backup energy when the grid is offline and can ease demand on a constrained grid while helping New Yorkers manage their energy bills." In addition, importantly the New York State Public Service Commission launched the "Reforming the Energy Vision" or REV initiative in 2015 that is set to modernize and transform the state's electric grid by accelerating clean



distributed energy resources, adopting new business models that incorporate technology and advancements and engage customers in energy choice while ensuring quality reliability and affordability. It has also been discussed significantly in this hearing, earlier this year news broke about the energy... Indian, Indian Point Nuclear Plant closing, we believe that there's a significant opportunity to supplement and strengthen the supply of energy using energy storage by deploying energy storage at various points along the grid both on the, the utility side of the meter and behind customer meters. So, there's a... one of the benefits of storage is it's, it's scalable and can be incremental so you can deploy a, a... the amount you need today and then change that amount in the future. We think the retirement of Indian Point provides New Yorkers another chance to define their energy future. New York has committed to being a leader on energy innovation and now is the time to broaden that vision to include flexible storage... or technologies like storage which in turn multiply the positive benefits of clean energy already in place without having... adding any harmful emissions. Clean energy companies stand ready to invest in New York and provide high

2 tech, high paying local jobs. I'll wrap up there  
3 given the time but thank you for the opportunity to  
4 share these thoughts and I look forward to your  
5 questions.

6 CHAIRPERSON TREYGER: Thank you and in  
7 your testimony you mentioned that the Governor who is  
8 a long term proponent of, of, of the closure of  
9 Indian Point announced that the power plant could  
10 shut without increasing emissions or cost tax payers  
11 and without impacting the system's reliability and  
12 again I... you know we and council... many, many of us in  
13 the council support the closure of Indian Point in,  
14 in, in light of numerous concerns but what we heard  
15 today is that we're not clear yet on the impact as  
16 far as potential rate increases for, for New York  
17 City residents and as far as the system's reliability  
18 because one plant has not even started construction  
19 yet, it has permits we're hearing but has not... they  
20 haven't started building it yet so there is a  
21 potential for an impact in these areas, if you can  
22 comment on that.

23 RICHARD WEBSTER: Right, well I mean... I  
24 mean I have two things, operation Indian point is not  
25 a risk-free enterprise, right, we know that Indian

Point for sure is, is causing huge damage to the Hudson River, we're running the risk of a major nuclear accident. So, we have to compare risks of... in the future for risks that we're running now, it's not... the status quo is not a risk-free situation. If we look at the risks in the future what we've heard is that the... energy system depends primarily at the moment the price on, on the, the price of gas and it's not only the case, I mean people have tried to say well nuclear is cheap energy, it really isn't cheap energy. What we've seen is that nuclear plants if they don't have some sort of subsidy will not be able to compete in the... in the market right now because the price of other things has come down so much and so for the future what I would say is that we have quite a rosy future ahead of us happily on this particular point and there may be some other things but the outlook isn't quite so rosy but energy prices are... from, from renewables are coming down quite quickly and the... importantly the, the pricing of renewables is not for certain than the pricing of, of fossil fuel based generation. So, once we've installed renewable resources basically we've, we've sunk most of the cost, the, the, the... particularly

1                   for solar, the, the, the maintenance is relatively  
2                   low and so then it provides trouble free energy for a  
3                   long time into the future in, in a very predictable  
4                   and stable way and so I think as we transition from  
5                   technologies like nuclear and fossil fuels to, to  
6                   renewables we'll actually see a more stable and more  
7                   predictable future.  
8

9                   CHAIRPERSON TREYGER: So... yeah and, and  
10                  I, I concur that it just... I think like the officials  
11                  have to be very mindful that when they make certain  
12                  declarations that this will not have any type of  
13                  impacts for people, there are folks who literally  
14                  live check to check, who literally... and, and of  
15                  course the status quo has a major cost to it as well  
16                  and that's why we again we support... at least I  
17                  support, many of my colleagues support the closure of  
18                  Indian Point but we need to be mindful of those folks  
19                  who really who can least afford these types of  
20                  impacts where literally people live check to check  
21                  relying on funds to make sure there's dinner on the  
22                  table every night and, and that's what I'm worried  
23                  about and I, I again have to also reiterate that in  
24                  my district for example and in many parts of the city  
25                  as well we are anxiously, nervously awaiting what

1 FEMA decides with regards to the flood insure... flood  
2 zones of New York City that's going to have a  
3 significant impact on families, significant and what  
4 we're hearing from Washington actually is that they,  
5 they might even try to jack up the prices even more  
6 under the NFIEP program. So, when you... there's a  
7 cumulative impact that's why I say if, if it's not a  
8 natural storm that hits us or some climate change and  
9 all this it'll be a financial storm and then  
10 ultimately yes, we're protecting the planet which is  
11 number one, I, I agree 100 percent but we also have  
12 an obligation to make sure that these responsible  
13 transitions don't disproportionately hurt people that  
14 could least really afford these types of impacts.

16 RICHARD WEBSTER: Of, of course we  
17 absolutely agree with you and that's... and that's one  
18 of the reasons that we commissioned the series of  
19 reports from Energy Economic Consultants to look at  
20 the forecast for future energy prices and, and see  
21 that this really has a minimal effect on, on the  
22 future forecast and in fact future the future  
23 forecast some of them are down, some of them are a  
24 little bit up but we're hopeful that actually by the  
25 time it, it plays out what's been happening in the

1 marketplace is that renewables prices has been  
2 dropping faster than ever and faster than predicted  
3 and so what, what we're hoping and expecting is that  
4 there won't be a price spike from this and nobody's  
5 predicting that right now. So, I, I, I hear your  
6 concern but I think that, that right now we're,  
7 we're, we're confident that that won't happen because  
8 there are so many different ways of meeting the  
9 demand, it's not just... we're not just relying on one  
10 power plant being built in one place precisely  
11 because the energy's... it was an aggregated system it  
12 means that the energy can flow all around the place...  
13 [cross-talk]

14  
15 CHAIRPERSON TREYGER: But, but would you  
16 agree that as of this moment right now we... there's  
17 been more significant talk about renewable sources of  
18 energy for the past decade or even more than a decade  
19 but there still is a major capacity issue with  
20 regards to powering up our city... [cross-talk]

21 JOHN CERVENY: If I can just... [cross-  
22 talk]

23 RICHARD WEBSTER: Go ahead... [cross-talk]

24 CHAIRPERSON TREYGER: Yes... [cross-talk]

JOHN CERVENY: ...make a point on that, I actually looked up the numbers as you were... [cross-talk]

CHAIRPERSON TREYGER: Please... [cross-talk]

JOHN CERVENY: ...you mentioned... [cross-talk]

CHAIRPERSON TREYGER: ...yes... [cross-talk]

JOHN CERVENY: ...made the comment earlier and I... [cross-talk]

CHAIRPERSON TREYGER: ...I love numbers, yes... [cross-talk]

JOHN CERVENY: ...in, in the US in 2015 there were 7,500 megawatts of solar installed, which is a record year and it represented about 30 percent of the total capacity, new generating capacity in total in the country. 2016 there was 14,600 megawatts so really double 2015 again a record year for solar deployment and that now represents 39 percent of capacity which is greater than the next two categories which were solar and, and... or rather for wind and natural gas. So, it, it, it... there's a... there's a uptake in the rate of solar adoption that is really significant just in the last two years

that, that bodes well for the ability of solar to continue to meet demands going forward and we heard, you know the comments earlier from... actually from a New York-BEST board member, Patrick McHugh, that the growth in total demand, total growth on the load is relatively flat and that's true across the state and primarily... and mostly across the country, there are pockets of growth and there are pockets of growth within every utility footprint but the growth in peak demand continues to grow year over year and that's where a technology like storage can really play a tremendous role. So, you've heard about the, you know kind of annual... or daily cycle of demand, low demand, high demand, low demand. If you have enough storage deployed throughout the system you actually can save a lot of money on the system level cost of all of the poles and wires and transformers that it takes to serve those hottest few hours on the hottest few days every year. The entire system is size and built to, to lift... to, you know deliver that very short duration hottest peak on the hottest days during the heat... the three-day heat wave. So, if you have storage technologies deployed appropriately you can really take a bite out of that and, and in fact the



public service commission that is part of this REV proceeding calculated that the top 100 hours in New York State every year cost rate payers between 1.2 and 1.7 billion dollars annually. So, it's a... it's a really significant cost to serve those hottest few hours.

CHAIRPERSON TREYGER: So, would you agree that there's also... there's mixed reviews with regards to putting solar panels on all roofs because like for example I, I read that in Bermuda for example it doesn't rain that much so they kind of use their roofs to find ways to retain whatever water does come in to provide water for their... for their homes and also in case of New York City for example when rain comes down or if it's a major rain event or... you know the water will just come right off as, as far as retention of the water it's going to slide right off and hit, hit the pavement so have you heard about the mixed reaction to converting all roofs with, with solar panels?

JOHN CERVENY: Well certainly there's challenges in deploying solar, not every site is, is eligible... [cross-talk]

CHAIRPERSON TREYGER: Right... [cross-talk]

JOHN CERVENY: ...you know or appropriate, shading issues are usually a, a big factor but you can... you can mitigate that in some ways through this community distributed generation activity that's going on in the state, community solar activity and that's a tremendous way for people to buy into solar projects that can be sited in a place where it's appropriate and they still get the benefit and have contributed directly to, you know deployment of more solar. So, whether it can fit on their rooftop because they're shaded by a large building or not they can still have the, the direct benefit of, of solar.

CHAIRPERSON TREYGER: Yeah, I mean... look, I mean it's going to be a combination of things, it's not one size fits all for everything and... [cross-talk]

JOHN CERVENY: Absolutely... [cross-talk]

CHAIRPERSON TREYGER: ...the, the last, last question I'll, I'll have is just with regards to building human capacity for, for these initiatives and measures, is, is your organization working with for example like the public school system or have been... enlisted to work with the public school system

to examine our curriculums to examine whether or... for example I mentioned before earlier today that there's, there's a high school in Southern Brooklyn that had a room where kids are still working on carburetors for cars which I think will probably be obsolete a couple decades from now if not sooner so I'm just thinking how are we... how's industry working with our school system to equip the next generation to be the ones building these things and not shipping them overseas?

JOHN CERVENY: That's clearly part of our mission, we do a fair amount of work really at the community college level because that's where a lot of these training programs reside and so we've done work in, in Western New York in the capital region and we actually are partners with... well part... not... well with city university on a project in, in the city. So, we've, we've attempted to spread the word and, and work to build curriculum modules that can be replicated and used across the... [cross-talk]

CHAIRPERSON TREYGER: If I might... [cross-talk]

JOHN CERVENY: ...across the state... [cross-talk]

CHAIRPERSON TREYGER: ...suggest I, I think we're... I think we're starting to late when you just work with the college system, you know I think that this is something that can be introduced earlier, earlier... in earlier grades, some, some of our residents... there's, there's a financial factor as why they might not reach college for, for some of our city residents so I, I, I would like to certainly work with your group about working with the DOE and, and our education department on how we can introduce this at the earliest grades possible because... for example elementary school kids are, are working on a Lego program and if you think about the type of skill set you need to construct these type of things they, they apply to other things down the road. So, I, I just think that we need to think a little bit broader on that and I'd like to follow up with you... [cross-talk]

JOHN CERVENY: Sure... [cross-talk]

CHAIRPERSON TREYGER: ...on, on, on that item...

JOHN CERVENY: ...I would... I would like to do that... [cross-talk]

CHAIRPERSON TREYGER: Oh my colleague,  
Council Member Margaret Chin has a question.

JOHN CERVENY: Yes...

COUNCIL MEMBER CHIN: Well just... I mean  
with the New York... New York-BEST, okay, that sounds  
great. So... [cross-talk]

JOHN CERVENY: Everything we do is best.

COUNCIL MEMBER CHIN: Good, this is the  
first time I've heard of you guys so you've got to  
like to figure a way of really getting out there and  
this is the first time we heard about energy storage,  
storage so, I mean we know about data storage but  
this is the first time we hear about energy storage.  
So, it's like really how do you... how can we help to  
get the word out there and get people really  
interested and excited about it besides our public  
school but our, you know our neighborhood, our  
community board, I don't know do you work with Con  
Ed?

JOHN CERVENY: We do, very closely and...  
[cross-talk]

COUNCIL MEMBER CHIN: Okay... [cross-talk]

JOHN CERVENY: ...a lot of the work that  
Patrick mentioned earlier about the, the

1                   conversations with the Department of Buildings and  
2                   with the Fire Department of New York we were around  
3                   the table as well. So, we brought in kind of the  
4                   industry perspective into those conversations and  
5                   helped to actually end up part of our mission we run  
6                   a testing lab that we, we built in Rochester that's a  
7                   battery test facility and the testing that was done  
8                   for FDNY was done under contract there by the  
9                   operator of that lab, a company called DNV GL. So,  
10                  we, we work very hard to, you know find out what the  
11                  barriers to market entry are, it's... clearly getting  
12                  approval for siting is a... is a fundamental, if you  
13                  can't get approval to have it sited the project  
14                  doesn't exist. So, we've spent a fair amount of time  
15                  on that as an organization and as an industry group.  
16                  In terms of... [cross-talk]

18                 COUNCIL MEMBER CHIN: Are you working  
19                 with EDC and the, the Mayor's Office of Resiliency?

20                 JOHN CERVENY: Yes, yeah, we've, we've  
21                 certainly had conversations with them over the years  
22                 as well. I think there's always more that can be done  
23                 but the challenge is, is bandwidth and, and the  
24                 ability to, to support, you know all, all of the, the  
25                 possible activities. We're certainly interested and,

and happy to engage into... you know send people to meetings and to share information. I've spent a lot of time in New York, I live upstate but I've been down here a lot to, to engage with various groups and, and work with companies who are trying to site projects and buildings that kind of thing. So, there's... you know there's a number of us that, that do this kind of outreach and would be happy to follow up.

COUNCIL MEMBER CHIN: Are you also getting support from the state, the state governor, I mean tell us about energy storage and... [cross-talk]

JOHN CERVENY: Yeah, very much so... [cross-talk]

COUNCIL MEMBER CHIN: ...I mean... [cross-talk]

JOHN CERVENY: ...in, in fact it was an initial investment from New York State through NYSERDA that created New York-BEST back in 2010 and then set aside dedicated funding to help support energy storage related research development and deployment activities. So, so we were the beneficiaries of, of some state funding early on which is no longer a major... the... not... no longer the

2 majority of our funding we, we have other sources now  
3 that keep us alive.

4 COUNCIL MEMBER CHIN: Good, I mean I look  
5 forward to working with you and really hearing more  
6 about how, how can we do this, thank you.

7 JOHN CERVENY: Good, thank you.

8 CHAIRPERSON TREYGER: Okay, thank you,  
9 yeah, I mean there's a lot of... a lot of opportunities  
10 and, and areas that we need to further explore and  
11 time is of the essence more, more, more than... more  
12 for... more than just one reason so thank you both for  
13 your advocacy and your work today.

14 RICHARD WEBSTER: Thanks very much, thank  
15 you... [cross-talk]

16 JOHN CERVENY: Sure.

17 CHAIRPERSON TREYGER: And is that it? And  
18 with that our hearing is adjourned.

19 [gavel]

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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

May 11, 2017