

**TESTIMONY OF THE MAYOR'S OFFICE OF RECOVERY AND RESILIENCY
BEFORE THE NEW YORK CITY COUNCIL
COMMITTEE ON RECOVERY AND RESILIENCY**

Wednesday, April 26, 2017

INTRODUCTION

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 all the members of this committee, for the opportunity to discuss the progress the City has made 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

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 emission 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, including cutting greenhouse gas emissions 80 percent by 2050 (80 x 50). The path to 80 x 50 will lead to necessary energy efficiency upgrades to our buildings and greater reliance on all forms of renewable energy and storage. If carefully designed, greater reliance on distributed energy resources such as solar and reducing use of electricity through efficiency, along with changes being made by Con Edison to its 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 8 million people and 250,000 businesses rely on the electric system to power our buildings, our hospitals, our transit system, 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.

INDIAN POINT ENERGY CENTER

New York City's power supply is generated primarily by natural gas and nuclear energy. In late January 2017, the State announced 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 to 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 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 the costs 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.

INVESTING IN RESILIENCY

The City's plan to increase the resiliency of its electric and natural gas distribution system was laid out in *OneNYC*. Efforts have focused on hardening existing infrastructure to withstand climate events and quickly recover after such events occur. 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.

Utility Storm Hardening

The City's electric distribution system is owned and operated by Consolidated Edison Company of New York (Con Edison). Con Edison provides service to most of the city except for the Rockaway peninsula, which is served by PSEG-Long Island on behalf of the Long Island Power Authority (LIPA). Shortly after Hurricane Sandy in 2012, Con Edison filed a major rate case in which it proposed to spend \$1 billion 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 \$1 billion 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 operational strategy. The City has pushed PSEG-Long Island and LIPA to implement storm hardening recommendations made in a 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 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 integrated into its system design, planning and asset hardening investments and strategies in order to mitigate the risks of climate change to gas distribution infrastructure.

Climate Resiliency Design Guidelines

The City continues to ensure the resiliency of its own assets and today announced the release its preliminary Climate Resiliency Design Guidelines. Current building codes and standards incorporate historic weather data without accounting for changing climate conditions. These new guidelines establish for the first time 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 several months, the City will review and pilot the Guidelines on 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 that 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.

Building Resiliency through Renewables

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 last week 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. all whenever This 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 MW by 2019.

To ensure this renewable energy is available consistently, the Mayor established the City's first ever energy storage deployment target of 100 megawatt-hours (MWh) 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 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 governmental entities to identify opportunities for the development of offshore wind in areas that have been designated off the coasts 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 x 50 goals the City will 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 these technologies. The City continues to pursue opportunities to supply 100 percent of our electric needs from renewable resources and that our power supplier, New York Power Authority will be releasing a request for proposals to solicit such opportunities imminently.

The City also continues to actively advocate at the state and federal levels for changes to energy policies to help achieve the City's 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, both of which are crucial for driving down greenhouse gas emissions, promoting public health and increasing our energy resiliency.

Strengthening our Social and Economic 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 a 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 municipal building retrofit program and achieve the significant reductions in greenhouse gas emissions we will need to see from buildings citywide, the Mayor de Blasio announced the NYC Green Jobs Corps as a partnership with the Building Construction Trades Council. With this green jobs 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 the NYC Green Jobs Corps.

CONCLUSION

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. While we face significant challenges due to a changing climate, we are 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.

Testimony of Con Edison

Before the New York City Council

Committee on Recovery and Resiliency

Patrick McHugh

Con Edison

Vice President of Engineering and Planning

April 26, 2017

Good afternoon, Chairman Treyger and members of the committee. I am Patrick McHugh, Vice President for Engineering and Planning at Con Edison. I am 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 \$1 billion storm hardening program was completed at the end of 2016.

When I came before you in 2015, I recounted the events of October 29, 2012, when Superstorm Sandy struck our region, devastating our communities and our energy systems. As we all recall only too well, this storm brought historic flooding and sustained high wind, resulting in outages to over one million customers. The 13,000 men and women of Con Edison, some of whom had their own homes affected, worked diligently around the clock – supported by other utility workers from around the country – until all our customers were restored.

Almost immediately afterward, 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 ways to protect ourselves when another major storm hits.

Today, we are better prepared, better equipped, and better trained to withstand the onslaught of another Sandy, thanks to the four-year, \$1 billion 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:

1. Protect infrastructure from exposure to hazard, such as flood or tree damage.
2. Harden components to withstand being affected by a hazard, such as a high wind, or a falling branch, or tree.
3. Lessen impact to the overall system if a component fails, and,
4. 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 reliability dividends for the residents of New York City. For example, the work on our overhead systems has already prevented more than 107,000 customer outages.

Flooding from Sandy caused major damage to Con Edison's underground electrical infrastructure, particularly in 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 also have redesigned underground electrical networks using smart grid technologies in areas like the flood-prone parts of Brooklyn and Lower Manhattan. During Sandy, flooded equipment caused outages to customers outside the flood zone.

Now, streets at a higher elevation can retain their electric service during a flood event like Sandy. If major flooding required a system shutdown in advance, fewer customers would be affected because of these re-engineered networks.

To accomplish this and protect our underground system, 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 for each overhead feeder segment, we minimized the impact when a tree falls, and pulls down an overhead line. 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. As an example, an overhead line can extend several miles in length. We've installed close to 500 smart switches in New York City that can identify and isolate a problem, instead of affecting an entire overhead line. We've also installed almost 1,900 electrical devices that isolate and clear faults on smaller line segments.

These installations make the affected area smaller in scope. This translates to fewer homes and businesses losing power during major storms. These designs will improve performance during adverse conditions and will allow for faster restoration if service does get interrupted.

To further protect critical equipment in electric substations and steam generating plants, we've built more than 3.3 miles of flood walls around these facilities. Sandy shut down an unprecedented six transmission substations and 11 area substations. Salt water caused extensive damage to equipment used to monitor and operate the electric system.

With reinforced station perimeter walls, and installed barriers and gates, each Con Edison facility is now protected from potential flood waters that can affect station operations.

With this program's completion, 21 substations and generating stations are protected.

Additional efforts continue with the East 13th Street substation. Once complete, we will have raised our Control Room, installed additional high-voltage circuit breakers, and completed a fiber-optic protection system, all of it exceeding FEMA standards. Because of the intricate electrical work involved, it will be completed in 2019.

In addition to these capital programs, we also are focused on training and planning for storms. We have trained our employees in the field with tablets so they can quickly provide damage assessments. These damage assessments are electronically submitted to planning groups that facilitate even quicker restoration efforts and repairs. Quick damage assessments mean quicker and more accurate dispatching of field forces, and that reduces restoration times.

We also work closely with New York City Emergency Management, often conducting joint exercises and seminars. This way, both city and Con Edison emergency management groups are personally acquainted. We conduct our drills jointly and both emergency management teams are present during each other's drills. And of course, we coordinate closely with them during actual outage events.

Communication with our customers is critical during storms, and we have made it easier for customers to contact us. Customers can communicate with us through texting or 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's easier to get updates or other information, especially during 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 best protect their equipment. It doesn't matter if we have power available to furnish to our customers if they are not in a position to accept it. We have undertaken this process with the knowledge that we all face these challenges together and we meet them together.

What we have accomplished has made New York 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 using new criteria. All our activities have been redesigned to meet new challenges.

This July, in Staten Island, Con Edison will begin a five-year program to install smart meters throughout our service territory. These meters will provide customers with information about their energy use. It will help them use energy more efficiently and save money. These meters have the advantage of letting the company know as soon as a customer is out of service, decreasing company response times and outage duration.

Knowing that we've worked together to make New York City stronger and safer has been a rewarding task. We know that there are new challenges ahead. We are prepared to meet them and support our customers.

Thank you. I am happy to answer any questions that you may have.



New York Battery and Energy Storage Technology Consortium, Inc.

NYC Council Committee on Recovery & Resiliency

April 26, 2017

Topic: Resiliency of NYC's Electric Power – The Role for Energy Storage

Thank you for the opportunity to speak with you today. I'm John Cervený with the New York Battery and Energy Storage Technology Consortium (NY-BEST). Since its inception in 2010, NY-BEST has been working to catalyze and grow the energy storage industry in New York State and to establish New York as a global leader in energy storage. Our work is focused on four primary activities:

1. Acting as an authoritative resource on energy storage;
2. Advancing and accelerating the commercialization process for energy storage technologies;
3. Educating policymakers and stakeholders about energy storage, and;
4. Promoting the State's world-class intellectual and manufacturing capabilities and providing access to markets to grow the energy storage industry in New York.

NY-BEST works with our over 160 member organizations from industry, academia, government, and the nonprofit sector—as well as with other interested stakeholders and the public—to achieve our mission. We invite interested organizations and individuals to join us in growing a successful and thriving energy storage industry in New York State.

New York State's electric grid faces a number of challenges. New York households 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 and distribution systems are increasingly being stressed by new demands placed on the system. Events such as major storms and heat waves further exacerbate the grid's 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 energy 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 and programs that together comprise OneNYC. In 2016, the City committed to the deployment of 100 megawatt-hours (MWh) of energy storage citywide by 2020—and in doing so became the first city in the US to set an energy storage deployment target. 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, the New York State Public Service Commission launched the “Reforming the Energy Vision” (REV) initiative in 2015 to modernize and transform the State’s electric grid by accelerating clean distributed energy resource deployment, adopting new business models that incorporate technological advances and engaging customers in their energy choices, while ensuring the quality, reliability, and affordability of the electricity system.

Earlier this year, news broke that Indian Point nuclear power plant would be closing in 2021. Governor Cuomo, a long-time proponent of closure, announced that the power plant could shutter without increasing emissions or costs to ratepayers, and without impacting the system’s reliability. While planning to replace the power provided by Indian Point is still underway – New York has an opportunity to replace more of the same dirty, old technology with cleaner, more flexible and resilient technologies like storage, while growing hi-tech jobs across the state.

Climate change, and the impacts on our antiquated electric system can be seen all over the country – and battery storage can help keep the lights on with clean, flexible power. New Yorkers well remember Superstorm Sandy, which led to over 3 million outages in 2012. Similarly, Hurricane Irene and Tropical Storm Lee caused over 620,000 people to have power outages in 2011 and a massive snow storm in 2014 dropped 8 feet of snow on Buffalo in 24 hours and led to widespread outages. Extreme weather events are becoming more common and more severe across the planet. Energy storage coupled with renewables can provide a reliable, clean emergency power source to ensure uninterrupted power during these events.

Energy storage provides a host of benefits to the electric grid, to customers and to local utilities. Among the services provided by storage systems are peak shaving, energy management, demand response, renewables firming and shifting, and deferment of grid equipment upgrades. Storage can be sited and installed both quickly and incrementally, e.g. adding only what is needed, with an ability to add more and/or relocate storage assets as local conditions warrant. Over 90MW of storage were added to the California grid in response to the Aliso Canyon gas leak in a mere 7 months from RFP to commissioning.

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 technologies like storage, which can multiply the positive benefits of clean energy already in place without adding any harmful emissions. Clean energy companies stand ready to invest in New York and provide hi-tech, high paying local jobs.

Energy storage has a major role to play in the transformation of New York’s electric grid, in achieving the goals of a cleaner, more reliable and resilient grid. Energy storage is a cost-effective solution for many applications on the grid and it will be essential for meeting our renewable energy goals, and reducing our reliance on dirty peaker plants and the impacts of those plants on our neighborhoods.

Thank you for the opportunity to share our thoughts with you today. We welcome further conversation and would be pleased to continue to engage with you on these issues.

John Cervený
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Powering Ahead without Indian Point
Testimony of Richard Webster, Legal Program Director
April 26, 2017

On January 8th 2017, Riverkeeper joined Governor Andrew Cuomo, Attorney General Eric Schneiderman and the Entergy Corporation as parties to an agreement to close the Indian Point Nuclear Power plant in 2021. Entergy has already shortened its relicensing request to the nuclear regulatory commission to reflect this new closure date.

The safety problems plaguing Indian Point made its expedited closure essential.

There has been a seemingly endless string of crises faced by the plant in the past two years, including unprecedented problems with failed bolts in the core of reactor number 2 and a spate of unplanned shutdowns, radioactive leaks, fires, and explosions. Recently Entergy's rosy forecasts that reactor 3 would not have the same problems with failed bolts proved false, as new information show more bolts in reactor 3 recently proved faulty.¹

Indian Point's closure, not only removes a huge safety risk, but it also creates some major opportunities to pivot forward to affordable, reliable and sustainable power supply alternatives for New York's renters and homeowners, and its businesses, infrastructure and institutions.

In 2011 and 2012, Natural Resources Defense Council and Riverkeeper commissioned studies by one of the nation's leading energy consulting firms— Synapse Energy Economics on the feasibility of closing Indian Point.

In February of this year, we released a third such study— "Clean Energy for New York", which not only confirms previous findings that Indian Point can close without negative impacts, it also demonstrates the progress that's been made towards closing Indian Point in the past several years, thanks to:

- plummeting prices for wind and solar energy
- improvements in our power transmission grid, and
- flattening demand for grid-based power due to increases in local power generation - much of it renewable - and greater efficiency in the way we use energy.²

¹ <https://www.riverkeeper.org/news-events/news/stop-polluters/power-plant-cases/indian-point/failing-bolts-at-second-indian-point-reactor-raise-further-safety-concerns/>

² <https://www.riverkeeper.org/wp-content/uploads/2017/02/Clean-Energy-for-New-York-February-23-2017.pdf>



Indian Point is able to generate just over 2,000 megawatts of electricity, or about 10 percent of peak summer demand in the New York metropolitan area. The report examined six different energy replacement scenarios, and showed that this energy can be made up in a variety of ways, through investments in energy efficiency and renewable power sources with no impact to the reliability of the region's energy supply.

One scenario, for example, shows that about 1,000 megawatts of that power – 50 percent of Indian Point's capacity – can be replaced by the hydropower and wind power supplied through the Champlain Hudson Power Express (CHPE), a high-voltage direct current submerged power cable extending from Quebec to Queens. This project has all its approvals and could be online before Indian Point closes. In this scenario, the rest of the power will be made up by targeted energy savings projects, and a slew of renewable energy sources — including offshore and onshore wind farms and solar panels — that will be in place by 2021.

The New York Independent System Operator (NYISO) has recently confirmed that demand is lower than expected. The energy growth rate in the 2017 forecast is slightly lower than the rate published in the 2016 gold book. The lower forecasted growth in energy usage can largely be attributed to the increasing impact of energy efficiency initiatives and the growth of distributed behind the meter energy resources. Much of these impacts are due to New York State's energy policy programs such as the Clean Energy Fund (CEF), the NY-Sun initiative, and other programs developed as part of the Reforming the Energy Vision (REV) proceeding. the NYISO expects that these and other programs currently being developed to further implement the 2015 New York State energy plan will continue to affect forecasted seasonal peak demand and energy usage for the foreseeable future.³

The last sentence here is an understatement – in fact energy efficiency, “not just continue to *affect* forecasted [net] seasonal peak demand and energy, but continue to drive net demand lower than each previous year's forecast indicates for any given future year”.

³ NYISO 2017 draft gold book, page 2

http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Planning_Data_and_Reference_Docs/Data_and_Reference_Docs/2017_Gold_Book_Draft.pdf



Therefore, we are already on our way to closing Indian Point without reliability issues, without price spikes and with virtually all of the replacement power coming from renewable sources.

Governor Cuomo and the Public Service Commission have been planning for Indian Point's closure since 2012, and put game-changing policies in place to foster this transition, such as the state's commitment to utilize 50% renewable energy by 2030.

The January 8th, 2017 closure agreement for Indian Point will not only make us safer, it can also drive better, more sustainable energy policy. While New York State is making good progress on renewables, we need to keep up the pressure for good statewide and citywide policies on energy efficiency.

- In 2015, New York achieved 1.05% savings as a percent of retail sales. but many leading states are already achieving nearly double that amount of savings, or more: California (1.95%), Vermont (2.01%), Massachusetts (2.74%), Rhode Island (2.91%).⁴
- By drawing upon and improving existing efficiency programs that achieve significant energy savings while simultaneously developing new REV market mechanisms, New York State should be able to achieve higher levels of savings and ramp up efficiency levels even faster than has been done in other jurisdictions.
- Increasing energy efficiency, and thus reducing our total electric demand, will also make it easier and cheaper to achieve the requirement that 50 percent of our electricity come from renewable sources by 2030.
- High energy efficiency and incentives for utilities in New York State could save customers roughly \$3 billion in electric costs between now and 2030.⁵
- 85,000 jobs in New York are in the renewable and energy efficiency sectors. 82% are in energy efficiency and 15% are in renewables.⁶

Now, New York State and City can do even more. It can foster the higher levels of energy efficiency currently underway in states like Massachusetts, California and Rhode Island, which would eliminate any need for non-renewable energy to replace Indian Point.

⁴ 2016 American Council for an Energy-Efficient Economy Scorecard, <http://database.aceee.org/state/new-york>

⁵ Synapse Energy Economics, 2016 "Aiming Higher: Realizing the Full Potential of Cost-Effective Energy Efficiency in New York." <http://www.synapse-energy.com/sites/default/files/Aiming-Higher-NY-CES-White-paper-15-056.pdf>

⁶ Kubiak, Lauren, Natural Resources Defense Council <https://www.nrdc.org/experts/lauren-kubiak/new-report-85000-new-yorkers-work-clean-energy>



New York City should advocate and support the adoption of a robust and clear energy efficiency framework at the state level in order to save consumers money on their energy bills, ensure a clean and cost-effective Indian Point replacement portfolio, improve resiliency of the system overall, and to advance the city's ambitious 80x50 objectives.

Thank you for including Riverkeeper in today's important hearing to highlight the key points from Indian Point's closure and the opportunities it's closure creates for New York State and New York City without endangering grid resiliency and reliability. Riverkeeper and Synapse Energy Economics is happy to partner with New York City to ensure a reliable and renewable closure of Indian Point.

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Address: Doherty

I represent: Dir. Air Quality

Address: _____

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Name: Ruth and Webster

Address: 20 Seaw Rd Ossing N.Y.

I represent: Riverkeeper

Address: 20 Seaw Rd Ossing N.Y.

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Name: Sybil Kimball/Loches (ORR)

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I represent: Con Edison

Address: _____

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Name: Patrick McHugh

Address: 4 Irving Place

I represent: Cathy Kimball

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Name: A. Fiore (DCAS)

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Date: 26 April 2017

(PLEASE PRINT)

Name: John Cerveny

Address: 1360 Lenox Rd., Schenectady NY 12308

I represent: NY-BEST

Address: ~~850~~ 230 Washington Ave Ext. Albany NY

12203

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