

**TESTIMONY OF THE MAYOR'S OFFICE
BEFORE THE NEW YORK CITY COUNCIL
COMMITTEE ON
ENVIRONMENTAL PROTECTION**

February 11, 2019

I. INTRODUCTION

Good morning. My name is Susanne DesRoches and I am the Deputy Director for Infrastructure and Energy at both the Mayor's Office of Resiliency (MOR) and the Mayor's Office of Sustainability (MOS). I am joined today by Ke Wei, Assistant Director for Infrastructure also with MOR and MOS. I want to thank Chairperson Constantinides and members of the Committee on Environmental Protection for this opportunity to testify on behalf of the de Blasio Administration on Introduction 1318.

Our electric grid is one of the most critical lifeline systems in our city. It serves over 8 million people and 250,000 businesses. It supports our lives and livelihoods, including economic and governance activities of global importance. When it fails, the cascading impacts affect critical services from transportation to telecommunications, as well as our economy and our access to healthcare.

The grid, however, needs to be cleaner. New York State's existing transmission system does not enable enough renewable energy produced in the northern and western portions of the state to flow to the city. To clean up our grid, the City must reduce its reliance on old, inefficient fossil fuel-based power plants located in New York City while simultaneously increasing electricity transmission, allowing us to bring more renewable energy into the five boroughs.

II. OUR CURRENT ELECTRICITY PROFILE

Our electric distribution system is controlled by two primary entities: (1) Con Edison, which serves nearly the entire city, with the exception of the Rockaway peninsula; and (2) Long Island Power Authority, or LIPA, which serves the Rockaway peninsula through an operating agreement with PSE&G. Con Edison is regulated by the State's Public Service Commission (PSC).

Roughly half of the City's annual electricity consumption comes from 21 in-city power plants, which have a combined capacity of over 9,000 megawatts (MW). Because of the lack of transmission capacity to access power generated in other parts of the state, the New York State Reliability Council mandates that about 80 percent of the city's peak electricity demand must be located within city limits to ensure the lights stay on. All of the electric generating units in New York City rely on natural gas as their primary

fuel and fuel oil as backup. Being able to burn two types of fuel, in case one is not available, is also a reliability requirement.

While maintaining reliability is always a priority, the City also deserves an electric system that is clean and efficient. A majority of the city's power plants are old, inefficient, and dirty. By 2021 when Indian Point Energy Center retires, over 70 percent of the plants in New York City will be over 50 years old, exacerbating their contribution to air pollution.

The City's 80 x 50 Roadmap lays out the key steps to transitioning our electricity from fossil fuels to a clean energy future. Important elements of that transition are a significant increase in (1) local and large-scale renewable power, (2) new transmission that connects New York City to renewable power generated elsewhere, and (3) energy storage to balance the intermittency of wind and solar.

III. OUR ELECTRICITY TRANSITION

The Administration strongly supports transitioning the in-city power plants to cleaner sources of electricity. In fact, the City and the State's climate goals, and our energy future, depends on it.

Due to new emissions rules that we expect from the New York State Department of Environmental Conservation later this year, we anticipate New York City's oldest peaker plants will retire and will be replaced in part by energy storage. To encourage the proliferation of storage across the State, the PSC recently set a *statewide* energy storage goal of 3,000 MW by 2030. Within the city, the PSC is requiring Con Edison to procure 300 MW of energy storage by the end of 2022. This a great short-term goal, and will lay the foundation for broader storage deployment across the city; however, bringing large scale renewable power directly to the city is more challenging and will require a long-term strategy and substantial investments in transmission and renewable generation.

For these reasons, the Administration supports the renewable energy and battery storage feasibility study envisioned in Introduction 1318. We suggest that this study be carried out as a component of the Long-Term Energy Plan required by Local Law 248 of 2017. By doing so, the City will be able to comprehensively assess measures to achieve deep decarbonization.

IV. RENEWABLE ENERGY BOTTLENECK

The Administration's climate agenda includes the goal to secure as much clean energy as possible for the city. While our solar goals are aggressive, solar in the city alone will not provide enough renewable power to meet the City's electricity needs. To meet our 80 x 50 goal, including efforts to electrify our buildings and transportation, it is clear that New York City will require significant amounts of renewable energy flowing from upstate to downstate, as well as a substantial portion of the State's recently announced 9,000 MW of offshore wind directly connecting into the city.

The reason that increasing the city's access to upstate renewables is so important is underscored by the following facts: Today, in upstate New York, about 75 percent of the electricity generated is already carbon-free. In downstate, with Indian Point currently operating, about 30 percent of the electricity generated is carbon-free. However, without more transmission, the energy generated by upstate renewables cannot flow to New York City.

New York City accounts for over 30 percent of the state's electricity consumption and 40 percent of the state's greenhouse gas emissions. To meet the State's 100 percent clean electricity goal by 2040 and dramatically reduce our reliance on polluting in-city power plants, the State must invest in both new transmission from upstate to downstate and offshore wind.

V. CONCLUSION

Thank you for the opportunity to testify. We share your goals to protect, improve and decarbonize New York City's electricity supply. We are happy to answer any questions you may have at this time.

**Testimony of Con Edison
Before the New York City Council
Committee on Environmental Protection
February 11, 2019**

Good morning. Thank you, Mr. Chairman, and members of the Committee for the opportunity to provide comments today. My name is Milovan Blair and I am the Senior Vice President for Central Operations for Con Edison. I am joined by my colleague, Kyle Kimball, Vice President of Government, Regional, and Community Affairs.

Our comments today are focused both on the incident that occurred at our Astoria East Substation on the evening of December 27th, 2018, and Intro 1318, which would require the City to study the use of renewable energy sources with battery storage to replace in-city gas-fired power plants.

Astoria Substation Incident

First, I would like to provide some more detail on the incident that caused the dramatic blue light in the sky that understandably caused concern in Astoria and our region.

At approximately 9:12 pm on December 27, 2018, an electrical fault – a malfunction - on a section of 138,000-volt equipment in one of our Astoria substations, caused a sustained electrical arc flash, creating a blue light. The intense blue light, combined with low cloud cover that night increased the incident’s visibility across the city. The equipment that malfunctioned is associated with voltage monitoring within the substation and a relay system that did not work properly. As a result of the malfunction, there was a transmission disturbance that caused a brief voltage dip.

We have replaced the faulty equipment, installed a redundant system, and are working directly with the manufacturer to minimize the chance of this happening again.

We sincerely apologize and deeply regret the disruption to our customers and the concern and confusion caused by its visibility. Due to the transmission disturbance, LaGuardia airport and other customers went to their backup power systems. Some customers throughout Queens served by the substation might have experienced a momentary voltage dip and would have had their lights flicker with no loss of service.

Thankfully, the incident did not cause any significant injuries or result in damage to personal property. The arc flash burned itself out and FDNY did not need to enter the premises. There were no impacts to air quality. A small amount of oil used as a coolant tested substantially below any level of concern, which was contained on the site and cleaned up.

The affected transmission equipment in our substation transforms high voltage electricity to a lower voltage, so that it can be used in homes and businesses. The substation is wholly owned by Con Edison and sits within the same complex as the privately-owned Astoria Generating

station, a power plant. Con Edison does not own any power generation facilities in Astoria. It is important to note that this incident would have occurred regardless of how the electricity was generated. Even solar and wind farms need substations to transmit power to customers. This incident would still have occurred even if the power supply was 100% renewable, green energy.

Intro 1318

We will now provide some comments on Intro 1318, which requires the City to study transitioning power plants that use natural gas to renewables and storage. Let me assure you, Con Edison fully supports the transition to cleaner energies, a transition that is already well underway at Con Edison. We believe that with careful planning, wise decision-making, and the strategic use of new technologies, we can build an energy system that will be cleaner and more efficient.

We know that our customers want clean, safe, and reliable electricity--and affordable.

We have to work together to get to a cleaner and affordable energy future. Con Edison asks this Committee and the Council at large for your strong support and collaboration for the following prerequisite strategies, programs, and investments, to get to our clean energy future:

- Renewables
 - We would like your support for our recently launched Shared Solar program that will install solar panels on our facilities, including in Astoria, and use the resulting bill credits to give a monthly discount to low income customers, so that our clean energy future is accessible to everyone.
 - Utility ownership of large scale renewable generation to take advantage of low-cost capital and other business synergies;
 - The development of the necessary transmission infrastructure to deliver that renewable energy to New York City;
- Technologies to empower smart energy choices:
 - Making energy efficiency programs and non-wire solutions a growing and important part of our core business;
 - Smart meter technology and implementation;
 - Investments and programs to accelerate the adoption of electric vehicles;
 - Finally, we ask for your support to ensure that battery storage, which improves grid resiliency and reliability, is permitted by the FDNY and DOB and becomes an integral part of our energy infrastructure.

Another way we're helping to support New York's 80 x 50 goals is our jointly funded study called Energy Infrastructure – Pathways to Achieve 80 X 50, with National Grid and the City of New York, through the Mayor's Office. The scope of the study is to develop and assess at least three paths to achieve the 80 x 50 goal, and the costs of those paths that could be borne by our customers. Our expectation is that the study will also identify key regulations, laws, and policies that could be modified or adopted to accelerate progress toward the goals.

For New York State and City to meet their short- and long-term carbon reduction goals, we need a major increase in large-scale renewable energy. We think it makes sense to let customers own and operate these large-scale renewable resources through their utilities. They can be constructed by private developers, but the financing and operating costs will be cheaper for our customers if utilities own them as utility ownership means a guaranteed source of renewable energy, lowering costs and increasing union jobs.

Through our clean energy subsidiaries, Con Edison is the second largest solar energy producer in North America. With 2,600 MW of renewable assets in 17 states, Con Edison's assets avoid 5.4 million tons of carbon dioxide emissions – the equivalent of taking 1.2 million cars off the road.

It is a common misconception that Con Edison generates all the power that customers use. Since deregulation occurred in the 1990's, our regulated utility business serving the New York region is currently not allowed to generate power. We are primarily a distribution business, with the exception of our steam generation facilities, in which we co-generate steam and electricity. Co-generation means we simultaneously produce steam and electricity using the same amount of fuel. This district steam system provides numerous environmental benefits, including co-generation and the avoidance of on-site boilers for individual buildings.

Our steam system generating plants, while considered a "power plant", produce steam for over 1600 buildings – and three million people - throughout Manhattan. Steam provides unique environmental benefits to help transition New York City to the carbon reductions goals we all share.

Large property owners and policy makers alike widely recognize steam as an important tool for carbon reduction. Two examples are the recognition of LEED points for buildings that use district steam, and the City of New York mandating the use of steam for new buildings that take advantage of the recent East Midtown rezoning.

Steam is part of the solution for many of our customer's energy and sustainability goals, the City itself – and this building - being Con Edison's largest customer. We hope the Council recognizes this and looks forward to continuing our discussions about the benefits of our steam system.

We understand the urgency in reaching society's carbon reduction goals and it is important to engineer a smooth transition that is affordable to our customers. Con Edison has an obligation to provide New Yorkers with the energy they need today to keep their homes and businesses energized. We look forward to working with you and other policymakers to ensure a smooth transition to a clean energy future.

This is not something any of us can accomplish alone, we're all in this together.

Thank you once again for the opportunity to join you here this morning. We would be happy to answer any questions you may have.

**Testimony of Rebecca Bratspies
Professor, CUNY School of Law and
Director, Center for Urban Environmental Reform**

**City Council Committee on Environmental Protection Oversight Hearing on the Astoria
Transformer Explosion and the Transition to a Green Grid, and Int. 1318.**

February 11, 2019

My name is Rebecca Bratspies. I am a Professor at CUNY School of Law, where I run the Center for Urban Environmental Reform. Thank you for the opportunity to present my views about the events of December 27, 2018 at Astoria Generating, and about Introductory Bill 1318 in relation to replacement of in-city gas fired power plants.

1. The City May Be Violating the Emergency Preparedness and Community Right to Know Act.

When the sky in New York City turned blue, it was eerie; it was confusing; and for the many residents who vividly remember 9/11, it was “beyond frightening.” I live roughly a mile from the affected facility. Along with thousands of my neighbors, I watched the sky glow and saw the smoke billow. I joined those neighbors on social media asking: “does anyone know what is going on?” Many reported that the most terrifying part was not knowing what was happening, or what to do. I am an expert in environmental policy, and even I could not answer a basic question: if there is a disaster at a power plant in Astoria, should we evacuate or shelter in place?

Astoria is home to 60% of New York City’s generating capacity. Six power plants are located in this small, densely-populated Queens neighborhood. EPA estimates that a disaster at one of these plants could impact up to a million people. Astorians are not prepared for such a disaster, nor is the rest of the City.

Decades ago, Congress enacted the Emergency Planning and Community Right to Know Act (EPCRA) to give citizens a right to access information about possible hazards in their community, and to the plans for how to respond, should an emergency occur. EPCRA embraced the proposition that the more we know about hazards in our community, the better equipped we are to protect ourselves from unacceptable risks.

EPCRA requires localized emergency planning. Each community must have a Local Emergency Planning Committee, or LEPC. Each LEPC must have public members, public meetings and its plans must be public. New York state directs that LEPC plans be available at public libraries. My colleague Professor Sarah Lamdan and I discovered that New York City is failing to meet these obligations. It is next to impossible to find the information EPCRA makes public, or even the most basic information about the City’s LEPC.

New York City obviously has emergency planning. That is the “EP” part of EPCRA. But federal law also requires “CRA”—the Community’s Right to Know. The generalized emergency preparedness education available from New York City’s Office of Emergency Management falls

far short. A community like Astoria has no way to access localized information about the specific hazards it faces, or what the plan should be if the sky turns blue. The City is not providing the community-focused transparency mandated by federal law. This leaves communities like Astoria at risk and in ignorance—exactly the situation EPCRA was enacted to prevent. Professor Lamdan and I urge City Council to investigate, and to ensure that the City fully complies with EPCRA.

2. The Transition to a Green Grid and Introductory Bill 1318.

I also want to speak to the importance of Int 1318, which will require the City to study the feasibility of replacing in-city gas-fired power plants. I whole-heartedly support this plan. In particular, I would like to share my research on how Rikers Island can be repurposed for solar generation and storage, making it possible to remove gas-fired power plants that were forced on the City two decades ago.

You may remember that in 2000 California was having rolling blackouts. The New York Power Authority used California's situation as a pretext to build 11 new gas-fired power plants in the City. All of them were placed in environmental justice communities—poor communities and communities of color. These plants were sited with virtually no process, and over vehement community objections. NYPA promised the power plants were a temporary emergency measure and would be removed after 3 years. Twenty years later, the power plants are still there.

At the time, NYPA claimed these power plants were necessary 'to keep the lights on.' Yet, the Public Service Commission found that the City could have met its peak power needs without these plants. Indeed, the New York State Comptroller expressed concern that the plan risked generating *more* power than the City required.

Although NYPA claimed the turbines would be in industrial areas, they were actually placed in communities. One was sited a block away from Queensbridge Houses, the largest public housing complex in the United States. One in Brooklyn was next to a playground and around the corner from a school; a third, in Staten Island, was across the street from homes. Four units were placed in part of the South Bronx known as 'asthma alley' because it has some of the highest asthma rates in the country. All of these communities were already overburdened.

This has to end. All of Rikers Island's 416 acres are within LaGuardia airport's flight obstruction area. Height restrictions and noise limit the possible uses. If 100 acres of Rikers were devoted to solar panels, the island could generate enough electricity to replace the "temporary" power plants foisted on environmental justice communities two decades ago.

Moreover, these communities are among those the Lipmann Report identified as most affected by Rikers. This plan offers some restorative justice. It removes power plants placed in the communities without input or consent, bringing improving air quality to those most impacted by Rikers. Once shuttered, the plants could be decommissioned and the land converted to much-needed green space.

Thank you for your attention. I urge you to enact Bill 1318, and to end the city's dependency on dirty gas-burning power plants.

National Grid Statement
The New York City Council – Environmental Protection Committee
Donald Chahbazpour, Director – Gas Utility of the Future
February 11, 2019

Good afternoon. My name is Donald Chahbazpour, Director of Gas Utility of the Future, National Grid. Thank you for the opportunity for us to present our perspective on how we transition to a low carbon, green energy system.

Climate change is the greatest challenge that humanity faces and at the same time it's the greatest challenge of the energy industry.

National Grid believes in the science of climate change and has a blueprint for drastically reducing greenhouse gas emissions (GHG) 80 percent below 1990 levels by 2050 (80x50) called the "Northeast 80x50 Pathway."

Our approach aligns with New York City, New York State and the Northeast clean energy transition policies to help reduce greenhouse gas emissions by 2050. We are a strong advocate for policy and regulatory approaches that provide reasonable methods to help achieve emissions targets in a reliable and affordable way on behalf of our customers. And we look

forward to the opportunity to collaborate with the City on this new legislation.

For National Grid, climate change isn't a political question, but scientific fact, and we believe that innovation and a diverse set of stakeholders at the table will enable us to reach the clean energy future that we all want. We are happy to join with the NYC Council in its pursuit to help combat climate change through this proposed legislation.

National Grid is also co-sponsoring a study with the Mayor's Office of Sustainability and Con Edison to begin the process of evaluating different pathways that New York City can pursue to effectively reach its goal of achieving 80 percent reduction in carbon emissions over 2005 levels by 2050, while maintaining safe, affordable, and reliable delivery of energy. The alignment of these efforts will help us achieve the greenhouse gas reductions we are all hoping to achieve. And while we pursue this goal, we will be looking for ways to reduce carbon emission in a cost effective way for our customers.

At National Grid, we've already taken concrete steps to move toward a clean energy future. Modernizing our infrastructure to meet 21st century demands and connecting customers to renewable energy will help us toward a future of an integrated, decarbonized energy system.

We show our commitment to that future through innovative projects such as our four Reforming the Energy Vision (REV) pilot projects incorporating cogeneration, gas demand response, smart homes and geothermal technology; the Newtown Creek renewable natural gas (RNG) demonstration project (in partnership with New York City Department of Environmental Protection). Over the years, we have also partnered with NYC and have phased out the use of #6 and #4 heavy oils in approximately 800 buildings. And we are looking at opportunities in the transportation sector to help drive down greenhouse gas emissions. We have also developed a new aggregate data upload process leveraging the EPA portfolio manager site to make it easier for our customers to obtain their annual aggregate usage data that is used to comply with Local Law 84 and Local Law 87.

We also continue to play an important role in transforming the heating sector through energy efficiency and oil-to-gas conversions.

Those who convert to natural gas heat enjoy convenience, a price discount compared to competing fuels and a “green” benefit that reduces emissions. Each year in New York City and on Long Island National Grid adds about 8,000 residential and commercial customers who shift from oil heating to natural gas – the equivalent of pulling 500,000 cars off the road for one year. As we bring on additional Renewable Natural Gas (RNG) projects, like Newtown Creek and other customer driven projects, we will begin to decarbonize the gas networks through which we deliver energy to our customers. We believe a decarbonized gas network plays a critical role in delivering a low carbon future, and that RNG is often an overlooked yet effective option to help decarbonize the heat and transportation sectors.

For nearly a decade, National Grid has provided customers with award winning energy efficiency programs that have helped save tens of thousands of therms annually, reducing energy use and their carbon footprint. In 2017, we provided more than \$20 million in energy efficiency services and incentives to save our customers more than 4 million therms

per year. We also offer a variety of rebates and incentives on energy efficient products to help customers save energy and money and we process more than 9,000 customer energy efficiency rebates each year. We are in the process of launching an e-commerce site which will provide customers instant rebates on eligible EE measures. We're also partnering with Con Edison, offering a new one pipe steam system energy reduction program.

And, we're committed to doing more to help our customers make more informed energy choices and develop new energy products and services.

National Grid looks forward to working with New York City to develop a roadmap to achieve its aggressive greenhouse gas emission targets.

Thank you.

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February 11, 2019

New York City Council Committee on Environmental Protection

Transition to a Green Grid

Brian McCabe
NRG Energy, Inc.



Safe Harbor

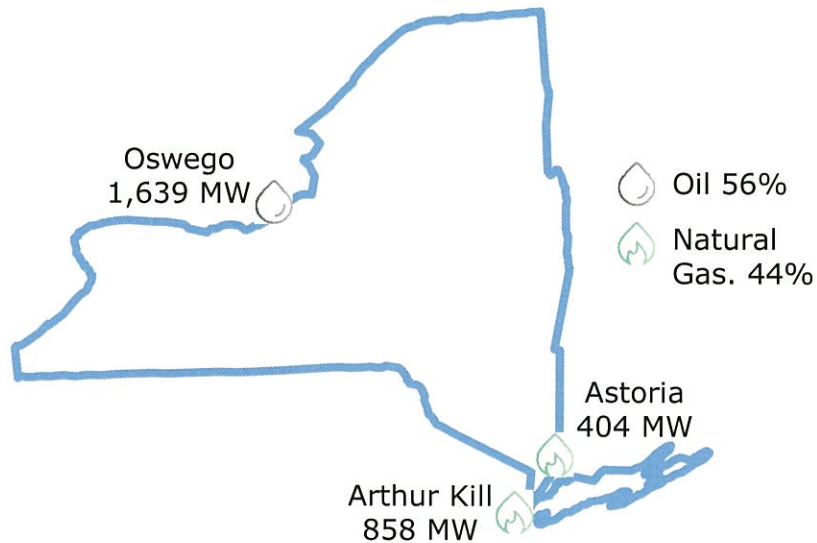


- In addition to historical information, the information presented in this presentation includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Exchange Act. These statements involve estimates, expectations, projections, goals, assumptions, known and unknown risks and uncertainties and can typically be identified by terminology such as “may,” “should,” “could,” “objective,” “projection,” “forecast,” “goal,” “guidance,” “outlook,” “expect,” “intend,” “seek,” “plan,” “think,” “anticipate,” “estimate,” “predict,” “target,” “potential” or “continue” or the negative of these terms or other comparable terminology. Such forward-looking statements include, but are not limited to, statements about the Company’s future revenues, income, indebtedness, capital structure, plans, expectations, objectives, projected financial performance and/or business results and other future events, anticipated benefits or costs of acquisitions or divestitures, and views of economic and market conditions.
- Although NRG believes that its expectations are reasonable, it can give no assurance that these expectations will prove to be correct, and actual results may vary materially. Factors that could cause actual results to differ from those implied by the forward-looking statements in this presentation are set forth in the Company’s most recent Annual Report on Form 10-K, quarterly and other periodic reports, current reports and other filings with the Securities and Exchange Commission at www.sec.gov. NRG undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

NRG in New York



Generation
2.9 GW



Retail customers served through:



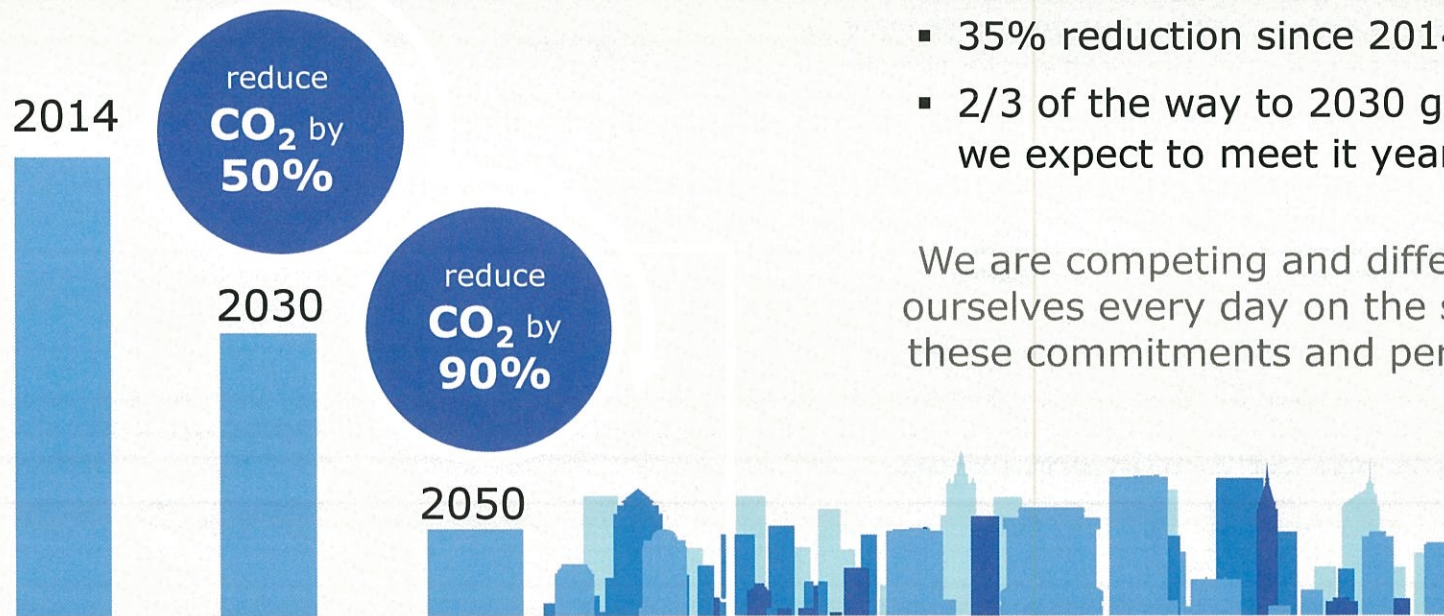
Quick Facts

- Acquired Astoria and Arthur Kill from Con Edison in 1999
- Acquired Oswego from Niagara Mohawk in 1999
- 124 Employees Statewide
- \$22.8M Annual Property Taxes
- Community Service - Supported over 100 local charities and donated approximately \$400,000 by the company, its employees and Green Mountain Sun Club

Our Carbon Goals



First U.S. based power producer to set a certified science-based target to:



Progress to date:

- 35% reduction since 2014
- 2/3 of the way to 2030 goal and we expect to meet it years early

We are competing and differentiating ourselves every day on the strength of these commitments and performance.

NRG's goals are directly aligned with the goals of the Paris Climate Agreement and support New York's commitment to the US Climate Alliance and goal of 80% decarbonization by 2050

Efficient and Effective Decarbonization: The 4 Product Future



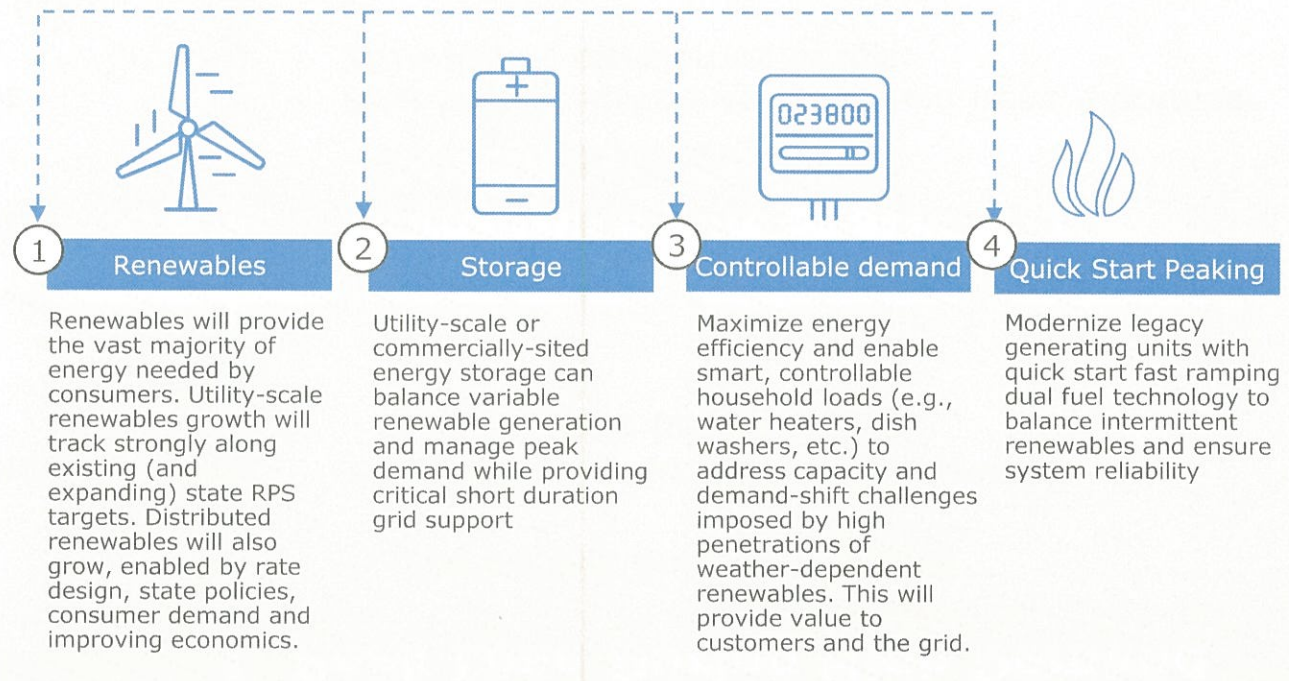
Reliable & Affordable decarbonization requires an “all of the above” strategy

Affordability hinges on two things:

- 1) Enabling pro-active consumer action (controllable demand) through dynamic retail markets
- 2) Using competitive market forces to drive renewable energy savings

Reliability requires the **smart** use of natural gas to back up renewables

The Four Product Future



We want to create an investment climate that supports the “Four Product Future.”

Green Energy

- Zero Fuel Cost, Zero Carbon
- Declining costs through competitive procurement and innovation

Peak Load During High Demand

- The hottest and coldest days
- Batteries to supplement renewable resources to bridge supply

Short Duration System Contingencies

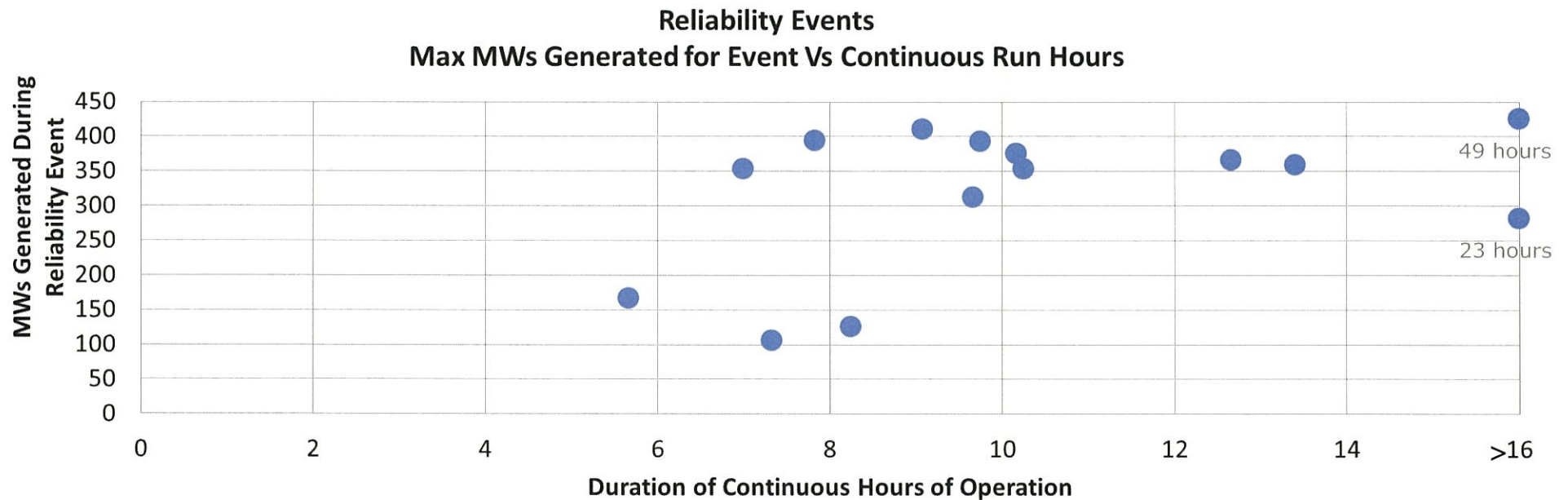
- Unexpected loss of transmission or generation
- Battery energy storage systems capable of responding to contingencies of < 4 hours

Long Duration System Contingencies

- Polar Vortex, Hurricanes Sandy and Irene, December 2018 Astoria transformer failure
- ***Intermittent renewable energy coupled with battery storage requiring regular recharging is not suited for this service***

NRG's Astoria Facility

Examples of Operating Performance During System Reliability Events



NRG's Astoria facility has provided dependable service during contingency events for periods well in excess of four hours

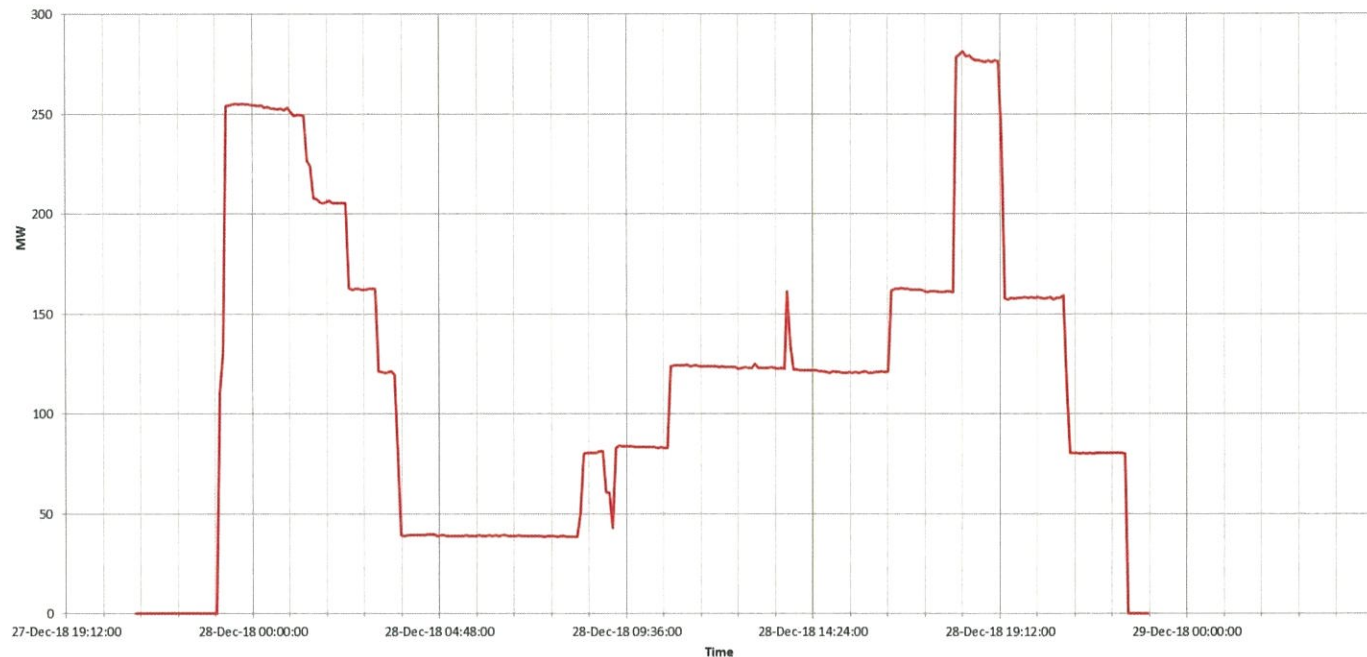
NRG's Astoria Facility

Performance on December 27-28, 2018 (ConEd Transformer Explosion)



NRG Response to Con Edison 138kV Substation Fault (12/27/18 to 12/28/18)

NRG's units operated for 23 consecutive hours following ConEd's substation fault



NYC peaking generation provides a critical reliability service that can not be met by renewable + storage alone



NRG Recommendations



NRG supports Int. No. 1318 requiring the evaluation of renewable resources with battery storage replacing in city gas fired power plants. However, we further recommend the analysis include an evaluation of the necessary trade-offs between:

- 1) Reduced Carbon Emissions
- 2) Cost
- 3) Reliability

Providing for an economically efficient path forward

- We believe that batteries can play an increasingly important role in meeting electric system needs.
- However, for the foreseeable future due to cost and technical limitations, they will need to be paired with some combination of quick start dual-fuel peaking units in order to address the full range of reliability needs that New York City will face.
- As such, the city should encourage the further deployment of battery storage together with repowering of older in-city peaking units with modern state-of-the-art technology.

NRG supports the Council's proposed feasibility study



February 11, 2019

Thank you

Brian McCabe
NRG Energy, Inc.

NRG's Recommended Changes to the Proposed Language

By Council Members Constantinides, Cabrera, Rosenthal and Cohen

A Local Law to amend the administrative code of the city of New York, in relation to replacement of gas-fired power plants.

Be it enacted by the Council as follows:

Section 1. Section 803 of title 24 of the administrative code, as amended by local law number 22 for the year 2008, is amended by adding a new subdivision e to read as follows:

e. Report on the feasibility of utilization of renewables with battery storage to replace in-city gas fired power plants. By December 30, 2019, an office or agency designated by the mayor or the mayor's office of sustainability shall prepare and submit a report to the mayor, the speaker of the council and the New York state public service commission on the feasibility of replacing existing in-city gas-fired power plants with renewables that use battery storage in a manner that is consistent with the public service commission energy storage deployment policy developed pursuant to public service law section 74. Such report shall include:

1. Expedited time frames indicating when such replacement can take place if the replacement of existing in city power plants with renewables battery storage is found feasible;

2. An estimate of avoided carbon emissions from such plan; ~~A review of the battery storage potential of lithium ion batteries;~~

3. An estimate of the cost of such plan using competitive market mechanisms;

4. Any impact to the reliability of electric supply to the city from such plan;

5. A comparison of (i) using renewables with battery storage to replace in city generation and (ii) a plan using renewables with battery storage to reduce carbon emissions from in city generation at the lowest overall cost while maintaining reliability of power supply to the city using competitive market mechanisms;

6. ~~A review of the battery storage potential of lithium ion batteries;~~ 3

7. The battery storage potential of liquid air energy storage batteries;

48. The battery storage potential sodium sulfur batteries;

59. The battery storage potential of flow based batteries;

610. The battery storage potential of lead-acid batteries; and

711. The battery storage potential of zinc batteries.

§ 2. This local law takes effect immediately. 18

Testimony of Marie Torniali, Chair of Community Board 1 in Queens

Good Morning, Chairman Constantinides and members of the committee. I am Marie Torniali, Chair of Community Board 1 Queens, and longtime Astoria resident. I am here to support Int. 1318 in relation to replacement of Gas Fired Power Plants.

The electrical accident known as the Astoria Borealis last December illuminated all the dangers we face as Astoria residents sharing our neighborhood with power plants. Astoria is a densely populated residential area that should not be burdened with providing half the city's electricity from aging oil burning power plants polluting our air.

Though we were assured in the aftermath that there were no environmental risks existed as a result of the accident, we find this hard to believe. Even if this is the case, we know that containments from these power plants are released into the air every day, and the NYC Department of Health has found higher air pollution levels in Astoria and Long Island City and high asthma rates in our children.

I do know that the city signed into law last year legislation that requires City-based power plant operators to stop using No. 6 oil by 2020, and number 4 oil by 2030, however, we need to go further. The time to phase out fossil fuel altogether has come.

Intro 1318. Requiring the City of New York to assess the feasibility of replacing these plants with batteries that store energy from wind, solar, and other renewable sources is an important first step in this process. Our community deserves to live in a toxic free environment. Hopefully the study will bear the fruit that greener technology can indeed replace these antiquated, polluting power plants and an implementation plan can be put in place.

Thank you for allowing me to comment and for leading the way to greener, renewable energy.

New York City Council, Committee on Environmental Protection, Chair, Constantinides
Int.1318, Replacement of Gas-fired Power Plants, 2/11/19, City Chambers, 10:00 AM
Comments of Catherine F. Skopic

My name is Catherine Skopic. I am speaking as an individual, educator, parent and am a member of several environmental organizations including Sierra Club and Interfaith Moral Action on Climate. (IMAC)

Thank you, Chair, Constantinides for presenting this amendment regarding a feasibility study to transition our gas-fired power plants to renewable energy with battery storage. As most of us are aware, transition to renewable energy is needed immediately - as soon as possible.

Our planet Earth is about 4 1/2 billion years old. "A record reflecting almost one million years worth of 100,000-year cycles of 'climate' reveal changes in ice volume that indicate periods of rapid (several thousand years) melting of ice sheets that end a glacial cycle and begin an interglacial." (*The Ice Chronicles*, Paul Mayerewski and Frank White). At no point did the level of carbon dioxide - CO₂ - go above 300 parts per million. In mid 2018, we were at 410 ppm. The present concentration is the highest in the last 800,000 and possibly the last 20 million years. (Wikipedia) Methane - gas - is about 80 times more greenhouse producing than is CO₂. We are in the Anthropocene Epoch - these are Man-Made, or, Person-Made - changes.

So, although our present moment is but a blip in earth's time, **this** unique blip could make or break life as we know it on our planet. The IPCC (Intergovernmental Panel on Climate Change) report shows we have a rapidly closing window of little more than 10 years to drastically reduce our burning of fossil fuels, if we are to survive. As we have largely caused this crisis, we can halt and "un-cause" it. Thank you, Chair Constantinides, and New York City Council for moving this crisis toward solution - stopping the burning of gas, fossil fuel. Let us know how & what we can do to help in this transition to renewable energy. Never has so much depended on so few.

**Testimony in Favor of Intro. No. #1318
Eric Weltman
Food & Water Watch
February 11, 2019**

My name is Eric Weltman, and I'm a Brooklyn-based senior organizer for Food & Water Watch.

I would like to express our strong support for Intro. No. 1318.

Five years ago, New York banned fracking – yet we continue to bear the burden of fossil fuel infrastructure, including pipelines and power plants that transport and burn fracked gas.

In fact, even as we join Chairman Constantinides in trying to shutter the City's gas-fired plants, we are fending off a proposed new project, the Williams pipeline, that would ship fracked gas off Staten Island, Coney Island, and the Rockaways – and we're also trying to stop a fracked gas power plant in New Jersey's Meadowlands that would send all its power to the City.

We are hearing a lot these days about "Green News Deals," and it's a nice-sounding slogan, but this is a bill that would make a real substantive impact in moving us off fossil fuels to 100 percent renewable energy.

The science is already clear and it's becoming even more clear: We must make a rapid transition off fossil fuels or risk climate catastrophe, including more tragedies like Superstorm Sandy.

It's also clear that natural gas is not a bridge fuel. It's a gangplank to climate chaos. And when produced by fracking, it poisons our water and communities.

We need to move fast – and this bill, with its 2030 timeline, is a tremendous credit to the bold vision of its chief sponsor.

We need to move fast – and we can move fast. Renewable energy technologies, along with battery storage systems, are advancing at a rapid pace. We can accelerate these developments by establishing ambitious goals like this one.

Food & Water Watch urges the council to pass this bill.

Thank you for your consideration.

FOR THE RECORD

Testimony of New York Communities for Change (NYCC) to the NYC Council Committee on Environmental Protection

February 3rd, 2019

My name is Pete Sikora. I am the Climate and Inequality Campaigns Director for New York Communities for Change. We are a community organization which promotes economic, racial and climate justice.

We support Councilmember Constantinides' Intro 1318 and urge the Council to enact it.

Unless the world radically slashes climate pollution, New York City will cook while slowly slipping under water and drowning, while we get hit by extreme weather such as hurricanes, heat waves, intense rain and flooding.

The crisis is also an opportunity to build a Green New Deal for New York. Huge numbers of good, union jobs should be created transforming our energy systems. The City can also improve public health by cutting local air pollution, including from the gas and oil-powered power plants in the city.

This legislation furthers such an effort by requiring the city to study replacement of those plants with energy storage and renewables. It may sound space age, but in practical terms, you can see the rapidly advancing battery technology all around us. Laptops, delivery bikes, and those fancy skateboard looking things today's crazy kids ride... all powered by cheaper and better energy storage technology.

NYCC members are primarily from low and moderate income communities of color. Utility and energy bills are too high and asthma is too common. Good jobs, especially good union jobs, are scarce. The city can and should plan and implement a transformation that would especially benefit the communities we organize in. This bill helps further such planning and transformation by ensuring a study of alternatives to the city's fossil fuel powered power plants.

We also understand that there are good union jobs in the city's fossil fuel power plants that would be lost when they are shutdown. The state and city should make sure those workers are taken care of as it moves to a 100% clean economy.

It's time to rise to the climate crisis and move to a Green New Deal for New York that works for all New Yorkers. We urge the Council to take 1318 up and enact it, and the Administration to expeditiously and effectively conduct the study.

Thank you.

From: Phil Vanaria
email: thephilectrifyingfav188@gmail.com

February 11, 2019

My Statement for NYCC Hearing re Con Ed Electrical Failures
in light of Electrical Arc Flash in Astoria, Queens 12.27.18

Good day.

I am Phil Vanaria. That's Phil as in Philip. Vanaria,
Vas in Victor, A, Nas in Notable, A, R, I, A.

I am grateful for this opportunity for active good citizens, such as
myself, to publicly voice their input regarding this Con Ed
malfunction.

The so-tagged Astoria Borealis may have been a captivating, even
radiant sight to behold, but, beyond its surface appearance,
more so it was frightfully alarming to a very significant
number of people and indeed created some troubling chaos
and, as any such arc, had the potential to be extremely
dangerous or deadly. Thanks only to some stroke of good luck or
a miracle, New Yorkers dodged a shocking bullet in that, in
those immediate moments, no injuries or property damage were
also reported. However, the chairman of this council committee
was perfectly correct when he worried for all of us outloud,
asking, 'But what about next time?'

Because, when it comes to terrifying Con Ed electrical faults,
there much too often, in some form or another, is always a
'next time'. Blackouts and localized outages, inflamed

Phil Vanaria

eruptive manholes, hellacious bursting steam pipes, toppling gas explosions, life-shattering landmine-like stray voltage. And, about that last one, stray voltage, well, I'm historically for 'New York and Con Ed' the #1 character and 'expert' on that: I'm the first victim and survivor, on publicly-reported public record at least, of such a so-called-back-then 'freak accident' in New York. There is a very outside chance that you may be familiar with me from 'ancient' headline news reports in New York and beyond about my legal victories versus Con Ed in 1999 and 2000 or other public statements I've made since 2001 about Con Ed hazards. In August 1997, I only miraculously survived my Near-Death-Experience-of-a-major-shock when I was in contact with an electrified street corner payphone in my West Village neighborhood and then also stuck to its even-more-fiercely-electrified adjoining bumper post, all by way of Con Ed's neglected voltage in their underground vault there and the fact that an inexpensive circuit breaker had not been installed there to prevent such an occurrence. I may look and sound good enough on the outside but, inside me, Con Ed's poor practices and failure left me with a mighty life-lasting batch of seriously testy challenges posed by electrical nerve and brain damage. I'm humbled to say that, 21+ years later, I still strive and strain to meet those ongoing tests as best as possible with determination, grace, good humor, remnants of my pre-injury high IQ, and some good and kind support.

But, for your express purposes right now, the matters of this are of this past December 2018, my experience can suggest a view into Con Ed's handling of some such troubling electrical failures. Perhaps, exactly as they were with me, they could be

Phil Varania

shameless, callous, rude, unapologetic, ungrateful, and even try to minimize any inconveniences, damages, or challenges produced by the occurrence. And then again widespread pressure by an enraged local citizenry and, in turn, their public servants in the media and political representation may prompt the spin of their public relation confectors and the putting-on of a more humble and cooperative public face, as in 2004 when popular outrage followed the fatal electrocution of 30-year-old doctoral student Jodie Lane on a street in the East Village due to some poor electrical patchwork done there by ConEd. The utility behemoth described last December's flash with the term 'abnormal event', which recalled to me the description of Jodie's circumstance as a 'freak accident', which the corporation's president at the time testified he believed had no precedent, no shock victim before that, contradicted of course by my experience years before and my continued public testimonies in 2004 and since. And, to add to that sunlight about how Con Ed might address the aftermath of an electrical danger, consider this too: through the years of my legal contest about my catastrophic injury, they let my ~~own~~ electrical tragedy be perceived as a 'freak accident', as far as human victims went certainly, and that is how legal and judicial players seemed to view it, thus limiting my own reparative award needs. Yet, in early 2004, after my earlier-mentioned testimonies, Con Ed's seeming non-recollection of my experience and headline victory after a three week trial against them in September 2000, and a helpful chat I had with the assistant to the New York state assemblyman who grilled Con Ed regarding Jodie's electrocution, Con Ed did come around to admit to their assemblyman that, since January 2000, they had received 18 claims of accidental shocks, clearly

a new extra-shocking and extra-disturbing revelation of injustice and indifferent harm to me specifically and to all good and innocent citizens in general. So in necessarily following up on this and other Con Ed hazards that may jeopardize the well-being of people, animals, and the environment, keep in mind these media-dubbed 'secret settlements', which might still be implemented for all that any of us may know. And also don't forget that, in 2004, the oddly tolerated practice used by Con Ed of apparently fudgy inaccurate 'self-reporting' to obviously some lax or clueless, etc. government so-called 'oversight' finally came under some revealing scrutiny. There's much to consider and remember in this rightful quest now by our public representatives.

But, I must point this out to you, especially since there are likely enough young and new leaders in your ranks; the timeline, extent, and full content of this powerful and influential monopoly's failings is longer and greater than most of us know or can remember. And between each publicized Con Ed electrical event and any possible consequential ~~outside~~ outrage and probe, each event with its own excuses, corporate delaying tactics, spins, patronizing, outside 'enabling' whether unintended or otherwise, media and political theater, some refreshing true heroics, wristslaps, etc. — between each of these events much of the general public and our public servants get distracted or overloaded by new non-Con Ed news or other business or zapped into apathy because of very meager, imperfect, uninforced, or defeated so-called resolutions to each event or their memory fades all around, much to the benefit of a repeatedly repeat offender. And then that cycle begins again, as if these failures were altogether a brand new never-before-seen-or-heard-of problem.

Phil Varona

As if there were no urgency to get genuine much-needed control over all these potentially deadly and disabling dangers, dangers that likely are all linked at the same root: New York's aged and too-neglected infrastructure. This hearing was scheduled reportedly to get an explanation from Con Ed for this disturbing event. That, I suspect, keeps sounding like the bottom-line explanation for each of these threats: the troubled decaying infrastructure. But, more than this oft-repeated pat explanation or some bigwig's cold detached cavalier proclamation that such events are urban 'inevitableities', the residents of New York, for once and for all our futures, deserve a solution that better serves much-needed improvement. This behemoth whose directors aggressively fight to preserve every piece of its enormous profits, who treat some of the people who have been their victims and longstanding customers or even enough of its rank-and-file workers coldheartedly, who charges New York residents utility fees higher than almost all other states, who even recently requested more rate hikes, who pays megasalaries to its leadership even when some of their leadership has deserved to be shaken up and out — this behemoth needs to be compelled, via the oversight of a non-crony-associated outside independent monitor and the deterring force of serious and enforced penalties and fines, etc that are not passed along to the general public via rate increases, to do the right thing, their expected public missions, to provide the finest and safest services by properly supervising, installing, maintaining, repairing, inspecting, upgrading, modernizing all their materials, equipments, and sites, etc. It's way past time for the Excelsioring Empire State's state and local government to step in and stop Con Ed's lagging and poorer practices and to demand and solidly participate in the formulation and

Phil Vannari

execution of a timeline-targeting concrete plan to correct our troublesome utility-run infrastructure. To be fair, much good has been done regularly by many of Con Ed's rank-and-file workers and even its more enlightened executives, but so very much more still needs to happen. Those of you who are our honorable public servants, I trust you agree and that my input and that which any other active citizen kindly and conscientiously presented for this hearing will be, in some way, helpful for the well-being and service of all living beings, the people, pets, and environs of New York and its good neighbors and visitors. Everyone MUST get 'ON IT!' Thank you and bless every good effort.
— . . . —

If I might add, please, also for your important awareness and action, this quick note: March is Brain Injury Awareness Month. Your active support at increasing such awareness in yourself and your constituency, with every person everywhere susceptible to such everyday traumas, is urgently needed to challenge this epidemic catastrophic health threat. Thank you again and bless us all!

Phil Vamaria



NEW YORK CITY CENTRAL LABOR COUNCIL AFL-CIO

President
VINCENT ALVAREZ

Secretary-Treasurer
JANELLA T. HINDS



Testimony on Int. No. 1318-2019

New York City Council Committee on Environmental Protection February 11, 2019

Good afternoon, my name is Alex Gleason, and I am the Director of Policy, Research & Legislation at the New York City Central Labor Council, AFL-CIO. Comprised of 1.3 million members across 300 affiliated unions, the New York City Central Labor Council, AFL-CIO, represents workers in practically every industry in the five boroughs, and particularly related to this legislation, workers in the utility industry. The Labor Movement of New York City and State have engaged in coalitions and policy initiatives to act aggressively against the dual crises of climate change and income inequality. The New York City Labor Movement recognizes the threat posed by climate change, and that is why our affiliates have been broadly supportive and proactive on these issues—from large building retrofits to installing renewables on public buildings. There have been ongoing, proactive efforts to respond to this crisis, which includes a just transition, with well-paying jobs. It is important that any effort to replace gas-fired power plants develop a strategy for addressing the potentially displaced skilled workers on that job site by creating a framework and floor to protect work, the tax base, and standards of an industry.

Any plan should consider the possibility for retrofitting or improving the operation of the existing facilities. Any long-term plan to completely replace current generation will require long-term planning and strategizing that cannot happen overnight. Framing a report on the future of energy generation in New York City should take the practical perspective that conversion to a carbon-free economy will not happen tomorrow, and therefore will be a piecemeal process, with many intermediary steps that create opportunities to both (steadily) reduce emissions, as well as sustain the skilled middle-income workforce.

Another element for any transitional plan to consider is the importance of quality training. Utility Workers of America Local 1-2 is an affiliate of the Central Labor Council and offers high quality training for the current utility generation in-and-around the City. It would be prudent for the City to tap into the vast training infrastructure of the Labor Movement and ensure that jobs being created by any transitional plan include labor standards, and a process for comprehensive job training through the union's funds. Without a strong coordinating agent, it will be difficult to scale the necessary training qualifications required for the necessary renewable jobs of the future, and this is something the unions have done for decades and decades with a long record of success.

As the City crafts a feasibility report on the utilization of renewables, there should be central consideration given to the skilled workforce at the power plants across the five boroughs. How can the City ensure any move from carbon-based-to-renewable economy does not erode the family-sustaining wage floors for workers who have collectively bargained to improve their conditions? There should be clear representation given for the institutional voice [union] of the workforce on any plan, working group, or committee seeking to transition these plants. The workforce must play a central role in the just transition of any industry.

It is obvious climate change and carbon emissions are having a drastic impact on the environment. Any plan to transition our utility generation system away from traditional gas-fired fuel should be done deliberately, with a plan that ensures the floor on wages and standards will be increased, rather than diminished. The Labor Movement is already working to create a 'greener' future, but that future would be done deliberately and be an opportunity for growth in a multitude of ways.

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

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

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: Donald Clark

Address: One Metro Tech Center, Brooklyn

I represent: National Grid

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1318 Res. No. _____

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: Milovan Blaz

Address: _____

I represent: Con Edison

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1318 Res. No. _____

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: Kyle Kimball

Address: _____

I represent: Con Edison

Address: _____

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

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

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

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: David Chahbazpour

Address: _____

I represent: National Grid

Address: 1 Metropolitan Center Brooklyn

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

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

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: Susanne Desroches, Deputy Director

Address: Mayor's office of Sustainability

I represent: _____

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

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

regarding
Con Ed's electrical failure
in Astoria 12/27/18
 in favor in opposition to Con Ed

Date: February 11, 2019

(PLEASE PRINT)

Name: PHIL VANARIA

Address: 2 KING ST. (APT 6C) / NY, NY 10012-2917

I represent: myself as an active good citizen
and historic victim and survivor of

Address: Con Ed's stray voltage, (since Aug 14, 1997)

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

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1318 Res. No. _____

in favor in opposition

Date: 2/11/19

(PLEASE PRINT)

Name: Rebecca Bratspies

Address: 2 Court Square LIC / Astoria

I represent: CUNY Law

Address: 2 Court Square LIC

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1318 Res. No. _____

in favor in opposition

Date: Feb. 11, 2019

(PLEASE PRINT)

Name: Catherine Skopie

Address: 140 West Broadway

I represent: Individual; Sierra Club Member

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1318 Res. No. _____

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: Eric Weltman

Address: 32 Court St, Brooklyn 11201

I represent: Food & Water Watch

Address: 32 Court St, Brooklyn 11201

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

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

in favor in opposition

Date: 2/11/17

(PLEASE PRINT)

Name: Eva-Lee Baird

Address: 415 Central Park West NYC 10025

I represent: ESO NYC City

Address: 415 Central Park West NYC 10025

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

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1318 Res. No. _____

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: BRIAN MCCABE

Address: 504 CARNEGIE CENTER PRINCETON NJ 08540

I represent: NRG ENERGY

Address: _____

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

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

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

in favor in opposition

Date: _____

Name: PETE SIKORA (PLEASE PRINT)

Address: _____

I represent: NEW YORK COMMUNITIES FOR CHANGE

Address: 1 METROTECH CENTER NORTH

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

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1318 Res. No. _____

in favor in opposition

Date: 2/11/19

Name: Rachel Specter (PLEASE PRINT)

Address: 151 W. 30th Street NY

I represent: New York Lawyers for the Public Int.

Address: _____

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