

w/s

Wendy Martin

From: Sam DiFalco <sdifalco@fwwatch.org>
Sent: Thursday, June 4, 2020 7:41 PM
To: Harry Shortway; Robert Sansone; Ken Kruis; Lorraine Deluca; Jerry Iannone; Nancy Peet; Russ Kamp; Wendy Martin
Subject: Resolution Against NJ Transit Power Plant Project
Attachments: Model Resolution.pdf; Renewable Feasibility for NJ TRANSITGRID.pdf; Midland Park Cover Letter.pdf

Dear Mayor Shortway and Midland Park Council,

Thank you for your outstanding leadership and solidarity in our successful fight to stop the Meadowlands power plant proposed in North Bergen.

We are writing to update you on a new threat to our local health and environment in North Jersey, the proposed NJ TRANSITGRID power plant. The proposal includes construction of a new full time gas-fired power plant along the Hackensack River in Kearny, NJ. This power plant would add 570,000 Metric Tons of CO2 pollution into our air annually, as well as toxic co-pollutants including Nitrogen Oxides and Particulate Matter.

The need to clean up air pollution to protect our public health has new urgency during the Coronavirus pandemic. A recent [Harvard study](#) concludes that populations exposed to unhealthy levels of air pollution are more vulnerable to the deadliest outcomes from the virus. The majority of counties in New Jersey have been graded "F" for ozone pollution by the American Lung Association in their 2020 report, and the pollution from this power plant would only worsen the high levels of chronic lung and other diseases in our towns. The stay at home orders from this pandemic have also shown us that our air quality will drastically improve with a reduction in fossil fuel emissions. Residents in Bergen, Essex, and Hudson counties are now breathing cleaner air because of lower emissions than has been experienced in generations.

In the past few weeks NJ TRANSIT has been pushing full steam ahead with their dirty energy proposal and issued the final Environmental Impact Statement late on a Friday during the worst days of the pandemic. This means that NJ TRANSIT can now apply for state permits from Governor Murphy's DEP, which are likely to be approved despite the fact that New Jersey's new Energy Master Plan calls for immediate and significant reductions in greenhouse gas emissions and a transition to 100% clean energy sources by 2050.

We are writing to ask for your municipality's support in calling on Governor Murphy to reject the proposed gas-fired power plant and direct NJ Transit to replace it with a renewable energy and storage alternative for public transit resiliency. We understand that you are very busy addressing your community's immediate needs during this crisis, but once the pandemic is under control this polluting project will still be here. It's more important than ever that we all work together to clean up air pollution in our state by investing in clean energy solutions.

We are requesting a virtual meeting, at your convenience, to review further information about the effects of this power plant and discuss some steps the municipality can take to stop the polluting project, including passing a strong resolution. Attached is a template of our resolution for your review. You can also learn more about this project at our web site: <http://nomeadowlandspowerplant.com>. Additionally a renewable feasibility report is attached to this email which may answer questions you have about a renewable alternative to the power plant.

Please email sdifalco@fwwatch.org to confirm receipt of this message and to coordinate a brief meeting to inform your town council about this polluting project and our request for a resolution opposing it.

Thank you again for your leadership, hard work and dedication to your constituents at this very challenging and difficult time. A small effort at this time to state your opposition to this project may eliminate the need for more

consuming efforts once the permitting process is underway. We look forward to working closely with you as we work to protect the health and safety of our residents.

We recently had a public digital town hall about this project which had nearly 100 attendees. There is a lot of helpful information about the project and the impact it will have on the surrounding community. The recording is available [HERE](#).

Sincerely,

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Sam DiFalco

North Jersey Organizer

Food & Water Watch and Food & Water Action

O (732) 839-0861

100 Bayard St. Suite 202
New Brunswick, NJ 08901

Fight like you live here.

June 4, 2020

To: Members of the Midland Park Council,

NJ Transit has proposed to build and operate a 140 megawatt gas-fired power plant in Kearny, NJ as part of its NJ TRANSITGRID project. The stated goal of the project is to free NJ Transit from reliance on the main electrical grid to power some of its trains and facilities. The project includes developing a microgrid to power certain train lines on a full-time basis as well as to provide power to operate additional NJ Transit train lines, stations, and other facilities when the main electrical grid has failed for up to two weeks. The project is being funded in large part by a \$410 million federal grant for public transportation resilience in response to Hurricane Sandy.

While the Don't Gas the Meadowlands Coalition agrees with the resilience goal of this project, we are writing to ask for the municipality's support in calling on Governor Murphy to reject the proposed gas-fired power plant and instead invest the \$410 million of federal funding into a renewable energy and energy storage-powered microgrid for NJ Transit grid resilience. Our analyses to date indicate that in 2020 the cost reductions and advances in technology of renewable energy and energy storage make this a feasible better alternative.

If the proposal as currently designed moves forward, it would result in a new fossil fuel-fired power plant operating 24/7/365 for decades. The power plant would be a major new source of air pollution in the state, including greenhouse gas emissions, bringing us backwards in the fight to protect public health and create a sustainable and resilient clean energy economy.

Pollutants produced by the power plant would include particulate matter, sulfur and nitrogen oxides (which contributes to the formation of acid rain, ozone, and smog), and known carcinogens such as benzene and formaldehyde. Exposure to these pollutants is linked to neurological, cardiovascular and respiratory disease, cancer, premature death, and birth defects.

The American Lung Association's State of the Air 2019 report shows that Hudson, Essex, Bergen and Middlesex counties already have an "F" grade for dangerous levels of ground-level ozone (smog) pollution. It also shows these same counties have significant vulnerable populations with pediatric and adult asthma, COPD, lung cancer, cardiovascular disease, and diabetes, whose conditions will only be exacerbated by additional volumes of air pollution. Conditions such as chronic obstructive pulmonary disease and rates of death can be exacerbated by even small increases in elevated ozone levels.

The proposed gas-fired power plant would be sited less than 1 mile away from densely-populated residential areas in Kearny and Jersey City, and less than 2 miles from Newark, Secaucus and Hoboken, with thousands of homes and many parks and schools sitting directly downwind from the proposed site. Predominantly low-income communities of color would be disproportionately impacted by the pollution from this power plant.

While we support NJ Transit's proposal to build a microgrid to keep trains running in the aftermath of climate-fueled disasters like Hurricane Sandy, increasing our reliance on the same dirty fossil fuels responsible for the climate emergency is an ill-conceived approach. Building a new fossil fuel power plant that would operate for decades directly contradicts New Jersey's legal commitment to reduce greenhouse gas emissions by 80% below 2006 levels by 2050.

Governor Murphy also has signed recent laws and issued a wide range of executive orders to fight climate change and promote environmental justice by transitioning New Jersey to 100% clean energy by 2050. We need Governor Murphy to uphold these commitments by rejecting this gas-fired power plant proposal and ordering NJ Transit to move forward with renewable energy and energy storage powering the microgrid for public transit resilience.

We would be pleased to take part in a phone or in-person meeting to review further information about the effects of the proposed power plant and to discuss how the Council can act to stop the project by approving a strong resolution as well as working with your peers in other municipalities and at the county and state levels.

Sincerely,

Samantha DiFalco

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North Jersey Organizer
Food & Water Watch and Food & Water Action
sdifalco@fwwatch.org
(973)-270-3619

On behalf of the Don't Gas the Meadowlands Coalition

350NJ-Rockland	Fund for a Better Waterfront
Bergen Tech Environmental Protection Initiative	Glen Ridge Environmental Committee
Bethlehem Township Environmental Commission	Green Party of New Jersey
BlueWaveNJ	GreenFaith
Central Bergen GreenFaith Circle	Hoboken Resist!
Central Jersey Coalition Against Endless War	New Jersey League of Women Voters
Central Jersey Environmental Defenders	MoveOn.org
Central NJ Chapter-The Climate Reality Project	New Jersey Association of Railroad Passengers
Citizens United for Renewable Energy (CURE)	New Jersey Sierra Club
Clean Water Action	New Jersey Tenants Organization
ClimateMama	New Jersey Working Families
Coalition to Ban Unsafe Oil Trains	NJ Association UCC
Coalition To Preserve The Palisades Cliffs, Inc.	NJ Skylands Sunrise Hub
Columbia University	NJ State Industrial Union Council
Cooper River Indivisible	NJ Student Sustainability Coalition
David Pringle Associates	NJ-08 For Progress
Democratic Club of Allendale	North Jersey Green Alliance
Displaced Homemakers Network of NJ, Inc.	Northern NJ NOW
Don't Gas the Pinelands	Occupy Bergen County
Ecco Bella	Our Revolution Essex County
Empower NJ	Our Revolution Ocean County, NJ
Environment New Jersey	Our Revolution Union County
Ethical Culture Society of Bergen County	People Demanding Action
Food and Water Action	People Over Pipelines
Franciscan Response to Fossil Fuels	Pinelands Preservation Alliance
	Possible Planet

Rahway River Watershed Association
SOMA Action
Sunrise Movement Jersey City Hub
The Climate Mobilization
The Climate Mobilization Hoboken Chapter
The Resistance Cafe
UCC Social Justice Task Force

Union County (NJ) Peace Council
Unitarian Universalist FaithAction NJ
WATERSPIRIT
We The People NJ-07
Weill Cornell Medical Associates
Westfield 20/20

**RESOLUTION OPPOSING CONSTRUCTION OF THE NJ TRANSIT GAS-FIRED
POWER PLANT IN KEARNY**

WHEREAS, NJ Transit has proposed to build a 140 megawatt gas-fired power plant (aka NJ TRANSITGRID Traction Power System) along the Hackensack River in Kearny, NJ; and

WHEREAS, this gas-fired power plant would be paid for using \$546 million of taxpayer-provided federal and state funding, including a \$410 million federal grant for Hurricane Sandy Recovery and Resiliency; and

WHEREAS, the Council of _____ has a principal responsibility to protect the health and safety of its residents, businesses, and institutions; and

WHEREAS, the proposed NJ TRANSITGRID gas-fired power plant would be another long-term source of harmful air pollution directly impacting North Jersey residents; and

WHEREAS, gas infrastructure facilities can annually emit into the air hundreds of tons of pollutants including particulate matter, toxic chemicals such as sulfur dioxide, mercury, and criteria pollutants (such as nitrogen oxides which contribute to the formation of acid rain, ozone, and smog),[1] some of which are known carcinogens such as benzene and formaldehyde, and also can be sources of radioactive contamination[2] and are known to increase the severity of asthma and other respiratory diseases; and

WHEREAS, particulate matter, once inhaled, can affect the heart and lungs and cause serious health effects, including lung cancer; with long-term exposure to ozone being linked to aggravation of asthma, emphysema, and chronic bronchitis, and likely to be one of many causes of asthma development; with long-term exposures to ozone being linked to permanent lung damage, such as abnormal lung development in children; with both ozone and particulate pollutants being linked to premature death, cardiovascular harm, and increased susceptibility to infections; with recent studies linking air pollution to increases in obesity, diabetes, Parkinson's disease, Alzheimer's and other forms of dementia, and stroke; [3] and with the people most at risk from breathing air that contains ozone including those with asthma, children, older adults, and those who are active outdoors, especially outdoor workers; and

WHEREAS, a new study conducted by scientists at Harvard University found that communities with unhealthy levels of particulate matter pollution (pm 2.5) were more likely to die from COVID-19 than other communities,

WHEREAS, people who live or work in close proximity to natural gas infrastructure facilities such as power plants and compressors are most at risk, particularly developing fetuses, children, older adults, and those with cardiovascular, lung, or respiratory problems and other vulnerable subpopulations, although under certain weather and terrain conditions, these pollutants can have a wider impact; and

WHEREAS, current protocols used for assessing compliance with ambient air quality standards do not adequately determine intensity, frequency, or duration of actual human exposures to pollutants and mixtures of pollutants emitted from natural gas infrastructure, noting that periodic 24-hour average measures can underestimate actual exposures by an order of magnitude; and

WHEREAS, based on the American Lung Association's State of the Air 2019" report, North Jersey, which will be most impacted by emissions from this power plant, already has significant populations (in some cases the largest in New Jersey), with pediatric and adult asthma, COPD, lung cancer, cardiovascular disease and diabetes,[4] whose conditions will only be exacerbated by additional volumes of air pollution; and

WHEREAS, developing fetuses and children are uniquely vulnerable to exposures as they receive proportionally greater doses of pollutants than adults and have immature organs and detoxification systems[5]; and

WHEREAS, peer-reviewed scientific studies[6] link exposure from air pollutants emitted by natural gas infrastructure facilities with neurological, cardiovascular, and respiratory disease, cancer, birth defects, and other adverse health impacts; with acute health impacts from these toxic exposures able to cause burning eyes, headaches, breathing difficulty and nausea for nearby populations and can exacerbate health problems; and with chronic health impacts that can include certain types of cancer as well as damage to lungs, liver, kidneys, reproductive, nervous, and cardiovascular systems; and

WHEREAS, the American Medical Association acknowledges the hazards of natural gas infrastructure and associated adverse health impacts; and

WHEREAS, Bergen, Hudson, and Essex Counties (the proposed site of the gas-fired power plant being Kearny) already receive grades of 'F' from the American Lung Association for ground level ozone pollution,[7]

WHEREAS, the annual health impacts of burning 1 (one) billion cubic feet per day of natural gas in the NY/NJ metropolitan area are estimated to be as follows [8] ; and

Health Impact	Incidents per year	Societal Value*	Direct Medical and Other Costs
Premature Mortality	35.3	\$238,712,000	\$10,585,000
Chronic Bronchitis	22.3	\$10,554,000	\$2,700,000

Hospital + Emergency Room visits	32.8	\$432,000	\$345,000
Asthma Attacks	724.5	\$43,000	\$42,000
Respiratory Symptoms	32,720	\$1,190,000	\$1,190,000
Work Loss Days	6,374	\$1,160,000	\$1,079,000
Mercury Related	NA	\$12,277,000	\$13,277,000
Total		\$265,369,000	\$29,217,000

*Costs to consumers for which they are not reimbursed.

WHEREAS, the NJ TRANSITGRID gas-fired power plant would become the 13th largest emitter of greenhouse gases in New Jersey, releasing 5,771,000 tons of Carbon Dioxide Equivalent greenhouse gases into the atmosphere annually [9]; and

WHEREAS, the primary ingredient of natural gas is methane, which leaks at every system stage of production, including extraction, processing, transmission, distribution, and final consumption; and

WHEREAS, methane is an extremely potent greenhouse gas with a global warming potential that is 34 times that of carbon dioxide over a 100-year timeframe and 86 times that of carbon dioxide over a 20-year timeframe; and

WHEREAS, methane emissions from gas-fired power plants may be considerably higher than previously thought, with a 2017 study[10] finding that gas-fired power plants released more than 20 times more methane than the facilities had estimated; and

WHEREAS, NJ Transit has never seriously explored alternative solutions to its proposed gas-fired power plant, including zero-emissions technologies like solar, wind, or tidal energy combined with battery energy storage, each of which, or in combination, would avoid the environmental and public health issues detailed in this resolution while still providing new jobs and other financial benefits to local municipalities; and

WHEREAS, NJ Transit's failure to seriously evaluate clean energy alternatives is in direct contradiction with several New Jersey laws and policies, including the state's Clean Air Act, 2018 Clean Energy Act, and final 2019 Energy Master Plan to achieve 100% clean energy

economy wide in New Jersey by 2050; and

WHEREAS, natural gas is becoming less attractive as an energy source due to the rapidly improving cost-effectiveness of renewable technologies, the impact of fossil fuels on our climate emergency (and the need to immediately make deep reductions, not increases, in greenhouse gas emissions,) and the increasing likelihood of fossil fuel infrastructures becoming stranded assets over their expected lifetime, it is likely that the long-term economics associated with NJ Transit's microgrid favor a renewable energy technology-based solution ; and

WHEREAS, the air pollution from the power plant would disproportionately harm communities of color and low-income communities in Kearny, Newark and Jersey City, in direct contradiction with Governor Murphy's Executive Order 23 to promote environmental justice for all; and

WHEREAS, the proposed plant would be built on top of a Superfund site and the former Koppers Seaboard Coke and By-Products plant as well as in an active flood plain that is at risk for at least one flood over 6 feet taking place between 2020 and 2050; and,

WHEREAS, the location of the plant conflicts with the Regional Plan Association's 2017 finding of the Meadowlands being at risk from sea level rise; and

WHEREAS, geological changes along the East Coast are causing land to sink along the seaboard, which is exacerbating the flood-inducing effects of sea level rise, which has been occurring faster in the western Atlantic Ocean than elsewhere in recent years; with a 2016 article in Scientific American[11] reporting that Sandy Hook is sinking at the rate of over one inch per decade while the regional sea level is rising at over three inches per decade; and

WHEREAS, the proposed gas-fired power plant would require 1.3 million gallons of water per day which would come from the municipal water system (Suez), with about 90% of this water to be used to cool the steam-driven turbines; with cooling towers to be used for evaporation, which would allow chemicals in the water to contribute to the existing levels of air pollution; and

WHEREAS, the proposed gas-fired power plant's requirement that chemicals such as ammonia, bleach and acids be delivered by trucks and stored on-site would increase the potential for spills into nearby wetlands and streams, and the Hackensack river; and

WHEREAS, the operation of the proposed gas-fired power plant would increase the volume of fracked natural gas used in New Jersey, which also would increase the drilling and associated environmentally-destructive activities associated with its production and transport[12] in the region; and

WHEREAS, Hurricane Sandy Recovery and Resiliency funding would be used to pay for a gas-fired power plant that would increase greenhouse gas emissions, thus increasing the likelihood of more Sandy-like hurricanes, when New Jersey and its governor should be taking every action possible to safeguard our climate future; and

WHEREAS, the 140 megawatts that NJ Transit states is required to power its microgrid project, including driving trains 24/7, can be achieved by the cleaner alternative of one or more renewable energy systems at the proposed Kearney site and on other NJ Transit property (solar, wind, tidal), along with one or more energy storage systems (batteries, flywheels, supercapacitors); and

WHEREAS, New Jersey's Clean Energy Law, Public Law 2018 establishes one of the most ambitious renewable energy standards in the country by requiring that 21 percent of the energy sold in the state be from Class I renewable energy sources by 2020; 35 percent by 2025 and 50 percent by 2030; and codifies the Governor's goal of achieving 600 megawatts of energy storage by 2021 and 2,000 megawatts by 2030; and

WHEREAS, Governor Murphy should direct federal grants and relief funds towards energy solutions that will help achieve New Jersey's renewable energy and energy storage goals; and,

WHEREAS, NJ Transit has the opportunity to become a nationwide leader in both renewable energy and environmentally beneficial transit solutions, it is incumbent upon the agency to make every effort to adopt renewable energy and energy storage to power the NJ TRANSITGRID project.

WHEREAS , the microgrid would fail if the gas-fired power plant was severely damaged or forced to shut down by an extreme weather event but the use of renewable energy and energy storage would greatly reduce the probability of a single point of failure jeopardizing the microgrid; and .powered by

WHEREAS, powering the microgrid project with renewable energy and energy storage would largely eliminate the need for NJ Transit to purchase natural gas or power from the main electrical grid; and

THEREFORE, be it resolved that the municipality and town council of _____, in the interest of protecting its residents, businesses and institutions, as of [date], strongly opposes the use of a gas-fired power plant to supply electricity for the NJ TRANSITGRID Traction Power System microgrid; and

BE IT FURTHER RESOLVED that the City of _____ supports a renewable energy (solar, tidal, wind) and energy storage system (battery, flywheel) in the place of a gas-fired power plant; and

BE IT FURTHER RESOLVED that the City of _____ urges Governor Murphy to direct NJ Transit to immediately undertake a comprehensive engineering and economic analysis of the use of various renewable energy and storage technologies to power its Traction Power System microgrid and report back to the Governor and the public on the results of this analysis before it proceeds with bids to construct the system; and

BE IT FURTHER RESOLVED, that the (municipal) Clerk shall forward this Resolution to:

- New Jersey Governor Phil Murphy - <https://www.nj.gov/governor/contact/>
 - NJ Department of Environmental Protection Commissioner
Catherine McCabe - Catherine.McCabe@dep.nj.gov
 - State Senator Brian P. Stack - SenStack@NJLeg.org
 - State Assemblyperson Annette Chaparro - AswChaparro@njleg.org
 - State Assemblyperson Raj Mukherji - AsmMukherji@NJleg.org
 - Food & Water Watch - sdifalco@fwwatch.org
 - Hudson, Bergen, and Essex County Freeholders and Administration
 - Essex - ddavisford@freeholders.essexcountynj.org
 - Bergen - mamoroso@co.bergen.nj.us
 - Hudson - asantos@hcnj.us
 - League of New Jersey Municipalities, 222 West State Street, Trenton, NJ 08608
 - The Bergen Record - Fallon@northjersey.com
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[1] Criteria Air Pollutants (CAP), or criteria pollutants, are a set of air pollutants that cause smog, acid rain, and other health hazards. CAPs are typically emitted from many sources in industry, mining, transportation, electricity generation, and agriculture. In many cases they are the products of the combustion of fossil fuels or industrial processes.

[2] Environmental Health Project Report, October 2017: Health Effects Associated with Stack Chemical Emissions from NYS Natural Gas Compressor Stations: 2008-2014
<https://www.environmentalhealthproject.org/sites/default/files/assets/resources/health-effects-associated-with-stack-chemical-emissions-from-nys-natural-gas.pdf>

[3] <https://www.sciencenews.org/article/list-diseases-linked-air-pollution-growing>

[4] Numbers of residents in 2017 in each county with the diseases shown:

County	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardio-vascular Disease	Diabetes	Poverty Estimate
Bergen	16,376*	61,021*	47,586*	525*	62,375*	70,715*	63,789
Hudson	11,286	44,533	29,582	379	36,091	40,122	104,660
*Highest volume in New Jersey							

[5] Reducing the staggering costs of environmental disease in children, estimated at \$76.6 billion in 2008, Trasande, L, et al, Health Affairs, May 2011: <https://www.ncbi.nlm.nih.gov/pubmed/21543421>

[6] PSE for Healthy Energy Repository for Oil and Gas Energy Research
<https://www.psehealthyenergy.org/our-work/shale-gas-research-library/>

[7] American Lung Association's 2019 State of the Air report, page 124
<http://www.stateoftheair.org/assets/sota-2019-full.pdf> Shows Hudson and Bergen Counties with grade of F for high ozone days.

[8] <https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u1997/HCWH%20pipeline%20ohealth%20impacts.pdf>

[9] <https://www.northjersey.com/story/news/environment/2019/06/21/nj-transit-wants-build-power-plant-meadowlands-kearny-amtrak/1509679001/>

[10] <https://www.desmogblog.com/2017/03/20/natural-gas-power-plants-fracking-methane>

[11] <https://www.scientificamerican.com/article/sinking-atlantic-coastline-meets-rapidly-rising-seas/>

[12] Concerned Health Professionals of New York/Physicians for Social Responsibility, Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking (Unconventional Gas and Oil Extraction), 6th Edition, June 2019
<https://www.psr.org/wp-content/uploads/2019/06/compendium-6.pdf>

Feasibility of Using Renewable Energy Technology to Power the NJ TRANSITGRID TRACTION POWER SYSTEM Microgrid

NJ Transit has stated it needs to build a 140 MW power plant in order to fully power selected train lines during a commercial power outage. Working with the US DOE and the NJ BPU It engaged Sandia Laboratories to do a feasibility analysis of this project in 2014. Sandia recommended the use of natural gas turbines to produce this power. Neither Sandia nor New Jersey Transit has ever produced evidence that they conducted a serious analysis of the use of any renewable technologies for this purpose.

The Don't Gas the Meadowlands Coalition has been working with two experts in renewable energy, Lyle Rawlings, CEO of Advanced Solar Products (who is also one of the nation's leading professionals in the field of solar energy) and Paul DiMaggio, CEO of GMax Tidal Energy. Both have stated that their renewable energy technologies could meet NJT's power requirements. Mr. DiMaggio has produced a proposal demonstrating how his tidal energy system, located adjacent to the planned NJT power plant site on the Hackensack River could produce the necessary power.¹ Mr. Rawlings, while not producing a full proposal, has investigated NJ Transit's overall need for power as well as potential locations for solar panels (with the support of Tim Sevener of our coalition who has studied the solar potential of hundreds of properties owned by NJT) and the issues of using solar and energy storage to accelerate trains, and has stated that solar and storage is a feasible solution. However, Mr. Rawlings pointed out that a solar/storage solution by itself may still require a significantly smaller amount of temporary, gas powered baseload generation due to sunlight variability. (The main obstacle to obtaining a full proposal from Mr. Rawlings has been NJT's refusal to provide detailed power requirements for each train line and details of power needed over very short time intervals to accelerate trains).

The combination of tidal and solar power could be an even more effective solution than either one separately as tidal produces a very steady baseload (eliminating the need for any type of fossil fuel baseload generation), while solar offers an opportunity to locate power sources in many locations adjacent to the train routes which is potentially more cost effective than a single tidal power station.

While we do not have a complete proposal utilizing these technologies, our experts have indicated that this is just a matter of engineering, based on obtaining detailed specifications from NJT. Our work with these two experts has also enabled us to address NJT's specific concerns with renewable energy technologies.

Load generation capacity and siting concerns

¹ Available upon request

As stated above, GMax Tidal Energy has tested the tidal currents in the Hackensack River next to the planned power plant site and has found they are sufficient to generate the 140MW of power needed. By utilizing an “energy by water storage tank” approach to store excess tidal energy and release it during low flow periods, this power requirement would be completely reliable 24x7.

Solar panels could also provide the required 140 MW of power. Based on studies of existing NJT properties as well as nearby lagoons² (solar panels float and still water ponds are excellent sites) there is sufficient space (at 2.5 acres per MW of usable area) to produce the total amount of power. NJ Transit has disputed this by claiming that some of its property is registered as historical sites, but this does not automatically exclude these sites from supporting solar panels and areas such as parking lots and equipment garages are not registered. The Koppers Coke site, planned for the gas plant, has 130 acres, which could provide up to 40 MW by itself. Other NJT sites include the Meadowlands Maintenance Complex shed roofs, PRR Rail yard, Hoboken Ferry roofs, Secaucus Transfer station, roof of Penn Station Newark and many others. This does not include the potential for solar panels to be placed directly above the tracks or adjacent to the tracks or even on the sleepers between the tracks (an approach being used in Europe). One mile of track can support enough solar panels to produce 1 to 3 MW of power. With 100 miles of track plus other buildings and infrastructure used as solar panel platforms. NJ Transit could easily produce this amount of energy from solar power.

Meeting rapidly fluctuating loads

Powering trains is not like powering a house. Accelerating trains from a dead stop requires a great deal of power over a very short period of time. An intermittent source of energy such as solar requires energy storage to support this. One problem with lithium battery storage is that repeated rapid discharging shortens battery life so lithium batteries alone are not effective long-term solutions to this problem. Other storage technologies such as flywheels and supercapacitors can be charged and discharged without the degradation of lithium batteries. (NJ Transit has stated its intention to incorporate flywheels for this application even with its gas-powered plant). Other potential efforts that can contribute solutions (in part or whole) to this problem include use of firm baseload tidal power for acceleration, stationary regenerative braking and storage (as SEPTA does in Philadelphia), staggering train start/acceleration periods, coordinating the times of accelerating trains with the times of decelerating trains, using slower acceleration rates and other timing optimization schemes.

NJ Transit also identified the need for very rapid availability of power and implied this may not be available with renewable energy solutions. The Tesla Powerpack has a response time of less

² Next to the Koppers Coke site is the long shutdown polluted Standard Chlorine Site, which has several lagoons for waste containment and could potentially contribute 10 MW.

than 100 milliseconds, and is used in South Australia to provide the same grid services as peaker plants (although both faster and cheaper) which NJ Transit uses today.

Another issue raised by NJ Transit is the need for very clean energy with very precise power output frequency. Frequency issues often arise from using only a single turbine (combining the power of many turbines evens out frequency variations). Batteries have extremely stable power frequency and can be an asset in meeting this need.

Overall, this is an engineering exercise, not an insurmountable technical issue.

Guaranteed reliability of the power source

This issue is addressed above. Solar power and battery storage alone are not enough to meet this need, but can be augmented by much smaller gas-powered turbines which would only be used infrequently, or by a combination of solar and tidal power. These solutions are technically and commercially available. Designing the optimal mix of power sources is an engineering exercise, not an insurmountable technical issue.

Cost

The cost advantage for solar and storage power systems over gas-fired systems have improved markedly since 2014.

According to Greentech Media, energy industry analysts at Wood Mackenzie say the combination of renewables with battery systems can currently replace approximately two-thirds of U.S. natural gas turbines — right now. Estimates predict the cost of storage alone could drop 80 percent by 2040.³

A September 2019 article on Utility Dive stated:⁴ If all proposed [U.S.] gas plants are built, 70% of those investments will be rendered uneconomic by **2035**, according to the Rocky Mountain Institute. Clean energy portfolios, defined as an optimized combination of wind, solar, storage and demand-side management, are cheaper than **90%** of the 88 gas-fired projects proposed across the U.S., according to **RMI**. (See RMI charts in appendix). A two page summary of the RMI report can be downloaded at <https://rmi.org/wp-content/uploads/2019/09/clean-energy-portfolio-two-pager.pdf>.

The full RMI report can be downloaded at <https://rmi.org/insight/clean-energy-portfolios-pipelines-and-plants>

³ <https://www.desmogblog.com/2019/02/22/inevitable-death-natural-gas-bridge-fuel-renewables>

⁴ <https://www.utilitydive.com/news/renewables-storage-poised-to-undercut-natural-gas-prices-increase-strande/562674/>

While the NJ TRANSITGRID TRACTION POWER SYSTEM is more complex than just a power station, the current costs of renewable energy technologies are already competitive with gas technology and promise to be even more competitive over time.

CONCLUSION

NJ Transit's objective, to build a power system that will run electric trains for two weeks without any commercial power, is a high bar as this has never been accomplished and our coalition supports this goal. However, NJ Transit has never thoroughly investigated renewable power technologies and is using outdated (and false) assumptions to avoid dealing with this issue. The obstacle to using renewable energy for this project is NJ Transit's unwillingness to perform the analysis and engineering work needed to prove its feasibility.

In order to fight climate change, protect public health, and achieve the aggressive renewable energy and storage goals in his energy master plan, Governor Murphy must order NJ TRANSIT to halt all work on the proposed 140MW full time gas fired power plant, and engage community stakeholders and renewable energy experts in an accurate, complete and timely assessment of renewable energy and storage solutions for the NJ TRANSITGRID project.

APPENDIX

From the Rocky Mountain Institute "The Financial Risks of the 'Rush to Gas' in the US Power Sector."

EXHIBIT 1 2019 represents a tipping point for CEP economics versus new gas-fired power plants

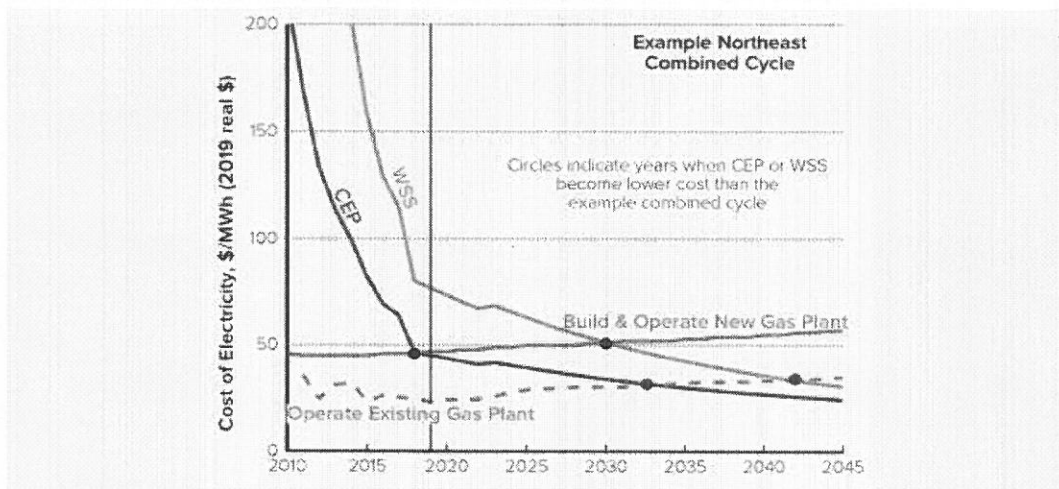
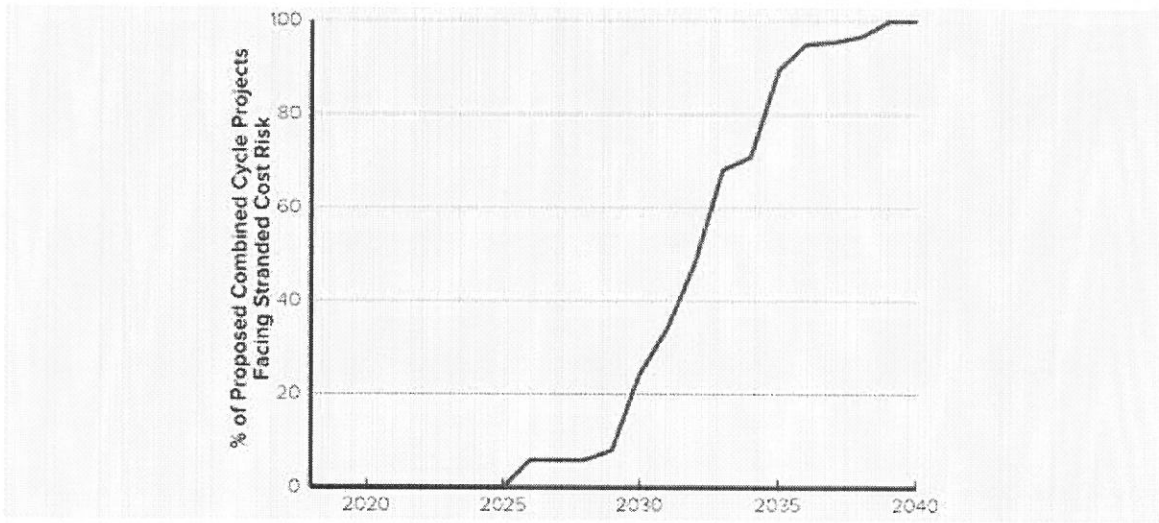


EXHIBIT 2 Percent of proposed combined-cycle gas plants that, if built, will face stranded cost risk



BOROUGH OF MIDLAND PARK
Resolution #043-19
January 24, 2019

**RESOLUTION OPPOSING CONSTRUCTION OF THE NORTH BERGEN LIBERTY
GENERATING GAS-FIRED POWER PLANT**

WHEREAS, Los Angeles-based Diamond Generating Corporation, a subsidiary of Mitsubishi, has proposed and has requested permits to build a \$1.5B, 1,200-MW natural gas-fired power plant (aka North Bergen Liberty Generating Station) in North Bergen, NJ on a 15-acre parcel near Railroad Avenue on the banks of Bellman's Creek. The electric energy produced by this plant would be transmitted by a 6.5 mile, 345-kV underground and submarine cable through North Bergen, Fairview, Cliffside Park and Edgewater and a new cable trench under the Hudson River to connect with ConED's substation on West 49th Street in Manhattan. All of this electricity would be used by ConED in New York. The project is anticipating permit approvals by the Environmental Protection Agency and the New Jersey Department of Environmental Protection by the end of 2019, and to be operational by 2022;¹ and

WHEREAS, this natural gas plant would be one of the largest sources of air pollution and greenhouse gas emissions in New Jersey;² and

WHEREAS, the municipality and Borough Council of Midland Park has a principal responsibility to protect the health and safety of its residents, businesses and institutions; and

WHEREAS, the people and environment of New Jersey have been increasingly subjected to a build-out of natural gas infrastructure, including but not limited to pipelines and distribution networks, compressor stations, power plants, combustion heating systems, metering and regulation stations, and pigging stations; and

WHEREAS, peer-reviewed scientific studies³ link exposure between air pollutants emitted from natural gas infrastructure facilities and neurological, cardiovascular and respiratory disease, cancer, birth defects, and other adverse health impacts. Acute health impacts from these toxic exposures can cause burning eyes, headaches, breathing difficulty and nausea for nearby populations and can exacerbate health problems. Chronic health impacts can include certain types of cancer as well as damage to lungs, liver, kidneys, reproductive, nervous and cardiovascular systems; and

WHEREAS, the American Medical Association acknowledges the hazards of natural gas infrastructure and associated adverse health impacts; and

WHEREAS, the National Ambient Air Quality Standards (NAAQS) are based on average population risks across a large area over a long period of time but do not adequately address human toxicity for residents living in close proximity to natural gas infrastructure or where they are subject to episodic high exposures during events such as blowdowns; and

WHEREAS, on Feb. 7, 2010 a gas blow operation was being performed at the Kleen Energy Systems LLC power plant construction site in Middletown, Conn. in which flammable natural gas was pumped under high pressure through new fuel gas lines to remove debris. During this operation, an extremely large amount of natural gas was vented into areas where it could not easily disperse. Welding and other work was being performed nearby, creating an extremely

dangerous situation. An explosion occurred when the gas contacted an ignition source taking the lives of six workers and injuring 50 others⁴; and

WHEREAS, the top 11 electric plant operators in the U.S. have been fined over \$13.3B since 2000 for 161 environmental violations, and⁵

WHEREAS, current protocols used for assessing compliance with ambient air quality standards do not adequately determine intensity, frequency or durations of actual human exposures to pollutants and mixtures of pollutants emitted from natural gas infrastructure, noting that periodic 24-hour average measures can underestimate actual exposures by an order of magnitude; and

WHEREAS, gas infrastructure facilities can annually emit into the air hundreds of tons of pollutants including particulate matter, toxic chemicals such as sulfur dioxide, mercury, and criteria pollutants (such as nitrogen oxides which cause smog, acid rain and contribute to ozone production),⁶ some of which are known carcinogens such as benzene and formaldehyde, and can also be sources of radioactive contamination⁷ and are known to increase the severity of asthma and other respiratory diseases. Particulate matter, once inhaled, can affect the heart and lungs and cause serious health effects including lung cancer. Long-term exposure to ozone is linked to aggravation of asthma, emphysema, and chronic bronchitis, and it is likely to be one of many causes of asthma development. Long-term exposures to ozone may also be linked to permanent lung damage, such as abnormal lung development in children. Both ozone and particulate pollution have been linked to premature death, cardiovascular harm and increased susceptibility to infections. Recent studies have also linked air pollution to increases in obesity, diabetes, Parkinson's disease, Alzheimer's and other forms of dementia and stroke.⁸ People most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers; and

WHEREAS, the best estimates of annual emission from the proposed power plant are based on a careful sample set of EPA data on U.S. gas-fired power plants of the same type (combined-cycle), similar vintage (online since 2012) and comparable size (complexes of over 300 megawatts) but nevertheless may differ from actual results due to a number of variations in the periodicity of EPA data collection and plant operating conditions. However, reasonable annual estimates are expected to be in the range of the amounts shown below. (Note: NOx refers to nitrogen dioxide and nitric oxide, SOx refers to many types of sulfur and oxygen compounds such as sulfur monoxide, sulfur dioxide, higher sulfur oxides, and disulfur oxides):⁹

- CO2 = 3.5 million metric tonnes^{10 11}
- NOx = up to 375,000 pounds
- Methane = 73 metric tonnes¹²
- SOx = up to 30,000 pounds; and

WHEREAS, people who live or work in close proximity to natural gas infrastructure facilities such as power plants and compressors are most at risk—particularly developing fetuses, children, the elderly, and those with cardiovascular, lung or respiratory problems and other vulnerable subpopulations, although under certain weather and terrain conditions, these pollutants can have a wider impact. Some homes in New Jersey are within 3,000 feet of the proposed plant and Harlem/Upper Manhattan (where one in four children suffers from asthma), which is downwind of the prevailing winds, is within 3.6 miles; and

WHEREAS, based on the American Lung Association “State of the Air 2018” report, the counties of Bergen and Hudson, which will be most impacted by emissions from this power plant already have significant populations (in some cases the largest in New Jersey), with pediatric and adult asthma, COPD, lung cancer, cardiovascular disease and diabetes,¹³ whose conditions will only be exacerbated by additional volumes of air pollution; and

WHEREAS, developing fetuses and children are uniquely vulnerable to exposures as they receive proportionally greater doses of pollutants than adults and have immature organs and detoxification systems¹⁴; and

WHEREAS, methane is the primary ingredient of natural gas and leaks at every system stage, including extraction, processing, transmission, distribution, and end-use consumption; and

WHEREAS, methane is an extremely potent greenhouse gas with a global warming potential that is 34 times that of carbon dioxide over a 100-year timeframe and 86 times that of carbon dioxide over a 20-year timeframe; and

WHEREAS, methane emissions from gas power plants may be considerably higher than previously thought. A 2017 study^{15 16} found that gas-fired power plants released more than 20 times more methane than the facilities had estimated; and

WHEREAS, Bergen and Hudson Counties (proposed site of the North Bergen plant) already receive grades of ‘F’ from the American Lung Association for ozone air pollution,¹⁷ the new plant will increase the concentration of ground ozone, increase the health hazards and risks from this pollutant and make it even more difficult to reduce the level of this pollutant. Conditions such as chronic obstructive pulmonary disease (COPD)—a long-lasting obstruction of the airways—can be exacerbated by even small increases in elevated ozone levels (e.g., an increment of 10 ppb), with a corresponding effect on public health and health care costs. As with chronic lung disease, even a small increase in the previous week’s average ozone level has substantial effects on death rates. One study showed that a small (10 ppb) increase in ozone pollution was associated with a 0.52 percent increase in deaths per day. This study found that an estimated 3,700 deaths annually in the U.S. could be attributed to this small increase in daily ozone levels;¹⁸ and

WHEREAS, New Jersey’s environmental justice communities already have some of the worst air quality in the nation, building another massive gas power plant will only exacerbate their plight; and

WHEREAS, municipalities to the North and Northeast of the proposed gas-fired plants will be particularly impacted by the Palisades ridge to the East that will prevent pollution from being easily dispersed to the East on prevailing westerly winds; and

WHEREAS, the proposed gas-fired electric plant will be approximately one mile from an existing gas-fired electric plant operated by PSE&G that is already one of the largest sources of air pollution in New Jersey and which already produces over 2 million metric tons of CO₂ annually,

WHEREAS, of the top 10 companies (parent corporations) most penalized for environmental violations in the US, nine are in the petroleum and energy industry and five are in the electric energy production industry (American Electric Power, Duke Energy, Dominion Energy, FirstEnergy and Alliant Energy);¹⁹ and,

WHEREAS, the proposed gas-fired plant will produce limited economic benefits to the town of North Bergen and, to a lesser degree, surrounding towns, this will primarily occur during the construction phase²⁰ (due, in part, to the fact that NJ electrical generating equipment is exempt from property tax) and after that the residents of these towns will continue to incur the health care costs associated with increased pollution for another 30 to 40 years; and

WHEREAS, the annual health impacts of burning 1 (one) Bcf/day of gas in the NY/NJ metropolitan area are estimated to be:²¹ ; and

Impact	Incidents per year	Societal Value*	Direct Medical and Other Costs
Premature Mortality	35.3	\$238,712,000	\$10,585,000
Chronic Bronchitis	22.3	\$10,554,000	\$2,700,000
Hospital+ER visits	32.8	\$432,000	\$345,000
Asthma Attacks	724.5	\$43,000	\$42,000
Respiratory Symptoms	32,720	\$1,190,000	\$1,190,000
Work Loss Days	6,374	\$1,160,000	\$1,079,000
Mercury Related	NA	\$12,277,000	\$13,277,000
Total		\$265,369,000	\$29,217,000

*Costs to consumers for which they are not reimbursed.

WHEREAS, an alternative approach to producing electricity from solar panels which would avoid all of the environmental and health issues noted in this resolution while still providing new jobs and other financial benefits to local towns and would be in conformance with Governor Murphy’s goal to increase the use of renewable energy even if all of the electricity was sold to New York City, could potentially gain local support and should be considered; and

WHEREAS, the NJ Work Environmental Council has stated, “Climate justice is worker justice. We stand together for both worker protections and strong climate policies because we can’t have one without the other. An injury to the planet is an injury to us all;”²² and

WHEREAS, the proposed gas-fired plant will provide electric energy to New York only, residents of Hudson and Bergen Counties and the rest of New Jersey will only incur the health care costs and environmental degradation caused by the plant during construction and operation; and

WHEREAS, the gas-fired power plant represents a direct threat to one of the state’s most crucial ecological resources. Wetlands such as the Meadowlands serve many beneficial functions. They are a natural filtration system, purifying our water. They preserve biodiversity by hosting a number of plant and animal species. They play a crucial role in flood mitigation by absorbing storm waters, protecting urban or residential communities in nearby flood zones. The construction of and pollution from the proposed plant could affect quantity and quality of water

flows, thereby harming the delicate animal and plant habitats in the wetlands and undermining their critical hydrological functions. The rehabilitation of the Meadowlands, which has been a triumph for the local groups that have worked hard to recover this area, would be squandered in order to provide power to New York City residents; and

WHEREAS, the plant will be within the half mile US DOT Evacuation Zone for oil train derailments which have been known to explode and can only be handled by letting them burn out; and

WHEREAS, location of the plant conflicts with the Regional Plan Association's 2017 finding of the Meadowlands being at risk from sea level rise. The RPA's Fourth Regional Plan²³ found that "of all the places in the tri-state region challenged by increased flooding from climate change, the New Jersey Meadowlands is at greatest risk." It also concluded that "The Meadowlands are also likely to be one of the first places to be permanently inundated from sea-level rise."; and

WHEREAS, geological changes along the East Coast are causing land to sink along the seaboard. This is exacerbating the flood-inducing effects of sea level rise, which has been occurring faster in the western Atlantic Ocean than elsewhere in recent years. A 2016 article in Scientific American²⁴ reported that Sandy Hook is sinking at the rate of over one inch per decade while regional sea level is rising at over three inches per decade; and

WHEREAS, construction would require digging a 40 foot trench through the Meadowlands to connect to Williams' Transco Pipeline, thus risking damage to sensitive wetlands. The connection to the Williams pipeline may require upgrades to the line and expansion of its compressor station at Riverdale risking increases in dangerous emissions from the compressor station; and

WHEREAS, the owners of the proposed gas-fired plant have stated this is being built to replace the energy that will be lost when the Indian Point Nuclear Plant is closed,²⁵ a 2017 study by Hudson Riverkeeper and the Natural Resources Defense Council states, "By 2023, assumed new energy efficiency and required new renewable energy [will] provide as much output as IPEC would have produced."²⁶; and

WHEREAS, the proposed gas-fired plant will require 8.6M gallons of sewage discharge wastewater per day which will allow evaporation of chemicals in the water to contribute to the existing levels of air pollution; and

WHEREAS, the proposed plant will require diesel generator backups for winter gas shortage situations which in turn will require storage of 1M gallons of diesel fuel onsite which has inherent risks of spills and leakage which would produce additional air pollution as well as ground pollution to sensitive wetlands and nearby water bodies; and

WHEREAS, the gas-fired plant will require on site storage of chemicals such as ammonia, bleach and acids as well as trucks to supply these products this increases the potential for spills into nearby wetlands and streams; and

WHEREAS, the proposed gas-fired plant will increase the volume of fracked-gas used in New Jersey which will also increase the drilling and associated environmentally destructive activities associated with its production and transport²⁷ as well as increased pressure on New Jersey and the Delaware River Basin Commission to accept fracked waste water for disposal; and

WHEREAS, the proposed gas-fired plant will utilize fracked natural gas thus increasing the amount of energy produced by fossil fuels in direct opposition to Governor Murphy’s commitment to moving New Jersey to 100% clean renewable energy usage. This type of massive fossil fuel infrastructure will last for several decades due to its large sunk costs (\$1.5B). This will increase long-term dependence on dirty fossil fuels and their associated environmental damage and health risks and is incompatible with the administration’s energy goals. The average New Jersey gas-fired power plants went online 23 years ago and 13 percent of the state’s gas plants went online more than 40 years ago.

THEREFORE, BE IT RESOLVED that the municipality and Borough Council of the Borough of Midland Park, in the interest of protecting its residents, businesses and institutions, as of January 24, 2019, strongly opposes construction of the North Bergen Liberty Generating power plant.

BE IT FURTHER RESOLVED that the Borough Clerk shall forward this Resolution to

- New Jersey Governor Phil Murphy
- Commissioner of the NJ Department of Environmental Protection
- State Senator Kristin M. Corrado
- State Assemblypersons Christopher P. DePhillips and Kevin J. Rooney
- Food and Water Watch, 100 Bayard Street, Suite 310, New Brunswick, NJ 08901
- The Sierra Club – New Jersey Chapter, 145 W. Hanover Street, Trenton NJ 08618
- Hackensack Riverkeeper
- Hudson County Freeholders and Administration and all Hudson County Municipal Councils, Boards of Health and Environmental Commissions
- Bergen County Freeholders and Administration and all Bergen County Municipal Councils, Boards of Health and Environmental Commissions
- League of New Jersey Municipalities
- NJ Advance Media

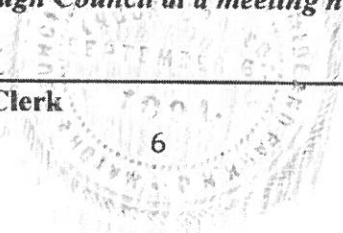
Wendy Martin
 Wendy Martin, Acting Borough Clerk

Harry Shortway Jr.
 Harry Shortway Jr., Mayor

Member	Motion	Second	Aye	Nay	Abstain	Absent
Kamp			✓			
Iannone		✓	✓			
Kruis			✓			
DeLuca			✓			
Peet	✓		✓			
Sansone			✓			

This is to certify this document is a true copy of a Resolution passed and adopted on first reading by the Midland Park Borough Council at a meeting held on January 24, 2019.

Wendy Martin
 Wendy Martin, Acting Borough Clerk



¹ <https://www.northjersey.com/story/news/environment/2018/04/10/new-power-plant-meadowlands-electricity-nyc/503255002/>
<http://newyork.cbslocal.com/2018/04/25/meadowlands-natural-gas-plant-proposal/>

² New Jersey Sierra Club May 2018 E-newsletter,
<https://spark.adobe.com/page/1cwq37BdNLoxg/>

³ PSE for Healthy Energy Repository for Oil and Gas Energy
Research: <https://www.psehealthyenergy.org/our-work/shale-gas-research-library/>

⁴ <https://www.osha.gov/news/newsreleases/national/08052010>

⁵
https://violationtracker.goodjobsfirst.org/prog.php?major_industry_sum=utilities+and+power+generation

⁶ Criteria air Pollutants (CAP), or criteria pollutants, are a set of air pollutants that cause smog, acid rain, and other health hazards. CAPs are typically emitted from many sources in industry, mining, transportation, electricity generation and agriculture. In many cases they are the products of the combustion of fossil fuels or industrial processes.

⁷ Environmental Health Project Report, October 2017: Health Effects Associated with Stack Chemical Emissions from NYS Compressor Stations: 2008-2014: <http://www.environmentalhealthproject-ny.org/>

⁸ <https://www.sciencenews.org/article/list-diseases-linked-air-pollution-growing>

⁹ Food & Water Watch

¹⁰ Letter from NJDEP dated 10/17/18 to William Sheehan, Hackensack Riverkeeper

¹¹ For reference, total NJ greenhouse gas emissions in 2015 were equivalent to 101M metric tons of CO₂ and electricity production in New Jersey currently generates 18M metric tons of CO₂. 3.5M tons is equivalent to a 19.4% increase in CO₂ from electric generation.
<https://www.state.nj.us/dep/aqes/climate/data.html>

¹² This is an estimate provided by the applicant in their DEP permit application and was provided in the NJDEP letter above. However, studies of similar power plants produced an estimate of **1,000 tons per year**. Recent studies of methane emissions from power plants have shown under-reporting by factors ranging from 21 to 120 by the power plant operators.
<http://blogs.edf.org/energyexchange/2017/03/16/study-emissions-from-power-plants-refineries-may-be-far-higher-than-reported/>

¹³ Numbers of residents in 2017 in each county with the diseases shown:

County	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty Estimate
Bergen	16,376*	61,021*	47,586*	525*	62,375*	70,715*	63,789
Hudson	11,286	44,533	29,582	379	36,091	40,122	104,660

*Highest volume in New Jersey

¹⁴ Reducing the staggering costs of environmental disease in children, estimated at \$76.6 billion in 2008, Trasande, L, et al, Health Affairs, May

2011: <https://www.ncbi.nlm.nih.gov/pubmed/21543421>

¹⁵ Food & Water Watch

¹⁶ <https://www.desmogblog.com/2017/03/20/natural-gas-power-plants-fracking-methane>

¹⁷ American Lung Association 2018 State of the Air report

<http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/new-jersey/>
Shows Hudson and Bergen Counties with grade of F for high ozone days and 22 orange days each

¹⁸ https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/climate-change-and-ozone-pollution.pdf

¹⁹

https://violationtracker.goodjobsfirst.org/prog.php?parent=&major_industry_sum=utilities+and+power+generation&primary_offense_sum=environmental+violation&agency_sum=&hq_id_sum=&company_op=starts&company=&major_industry%5B%5D=&all_offense%5B%5D=&penalty_op=%3E&penalty=&agency_code%5B%5D=&pen_year%5B%5D=&pres_term=&free_text=&case_type=&ownership%5B%5D=&hq_id=&naics%5B%5D=&state=&city=

²⁰ North Bergen Liberty Generating, LLC, Economic and Fiscal Analysis

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjQ7o2U8ezaAhXPwVkkHbRSAJAQFjAAegQIABAQ&url=http%3A%2F%2Fdocuments.dps.ny.gov%2Fpublic%2FCommon%2FViewDoc.aspx%3FDocRefId%3D%257BCF578449-B169-4EAF-9661-BE1A91A35A3B%257D&usq=AOvVaw2pa9fo0UCwqomDPB_Zv620

Shows assumptions and model for financial benefits from the plant.

²¹ <https://www.sierraclub.org/sites/www.sierraclub.org/files/scc-authors/u1997/HCWH%20pipeline%20health%20impacts.pdf>

²² <http://www.njspotlight.com/stories/18/04/30/op-ed-workers-and-environmentalists-stand-in-solidarity-on-climate/>

²³ <http://library.rpa.org/pdf/RPA-4RP-Places.pdf>

²⁴ <https://www.scientificamerican.com/article/sinking-atlantic-coastline-meets-rapidly-rising-seas/>

²⁵ <https://www.utilitydive.com/news/mitsubishi-subsiidiary-seeks-permits-for-15b-gas-plant-to-send-power-to-ny/521146/>

²⁶ <https://www.riverkeeper.org/wp-content/uploads/2017/03/Clean-Energy-for-New-York-16-121-02-23-2017.pdf>

Important caveat: New York will require an aggressive energy efficiency policy framework in order to secure the improvements needed to obtain the energy efficiency levels modeled in this analysis. Critically, such a policy framework is not currently in place in New York for attaining the levels of energy efficiency contemplated.

²⁷ PSR/CHPNY Compendium 5th Edition (March 2018): http://concernedhealthny.org/wp-content/uploads/2018/03/Fracking_Science_Compndium_5FINAL.pdf