

PHASE OUT PEAKERS

Replacing Polluting Urban Power Plants with Renewables and Battery Storage

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lean Energy Group (CEG), in collaboration with local New York City partners—New York City Environmental Justice Alliance, THE POINT, UPROSE, and New York Lawyers for the Public Interest—just released the firstever citywide analysis of peaker plants in the country. The report, *Dirty Energy, Big Money*, exposes the environmental and economic harms these inefficient, polluting power plants inflict on environmental justice communities in New York City. The report also highlights the opportunity for these aging, fossil fuel power plants to be replaced by clean renewables and battery storage technologies.

The report shows that:

- New York City's peaker fleet is old and inefficient; the oldest power plants were built in the 1950s through the 1970s.
- On average, the peakers operate for only a few hundred hours each year, with several operating fewer than 100 hours in a year.
- The City's peakers are significant contributors to local air pollution many lack modern pollution controls and together they account for more than 10 percent of nitrous oxide (NO_x) emissions on high ozone days.
- Even though they don't run much, the peakers are expensive, receiving hundreds of millions in capacity payments each year—\$4.5 billion over the past 10 years—making them the most expensive source of electricity in the New York power system.

Peakers are not just an issue for New York City; they are a nationwide



problem. There are more than 1,000 fossil fuel peaker plants operating across the U.S. today. Most of these peaker plants are sited in urban areas, usually in under-resourced communities. They run during times of high ("peak") electricity demand, like hot days when air conditioners are blasting, polluting mainly low-income communities and communities of color. As in New York, peakers are a local source of significant levels of NO_x and other pollutants, with major health implications for people living and working in these communities.

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Reducing the air pollution burden on environmental justice communities has always been an urgent problem, but it is now a greater public health crisis with the COVID-19 pandemic. Recent epidemiological studies have shown that increased emissions of particulate matter (PM_{2.5}) and nitrogen dioxide (NO₂) from power plants such as peakers have contributed to increased deaths from the virus in major urban areas. Reducing peaker emissions in major cities could be a critical strategy to alleviate the adverse health impacts of air pollution on those suffering from respiratory conditions and cardiovascular disease.

The table below shows the top ten metropolitan regions across the country where the health and well-being of its citizens are adversely impacted by an aging fleet of peaker plants. Based on a preliminary scan of publicly available data, these 10 regions are collectively burdened by nearly 200 peaker plants, representing a combined 48-gigawatt source of urban emissions. On average, the power plants operate less than four percent of the time, less than 300 hours each year, but they are likely to account for a significant portion of systemwide energy costs.

Metro Region	# of Peaker Plants	Total Capacity (MW)	Average Age (Years)	Average Annual Operation (Hours)
Baltimore-Washington DC	9	3,400	55	300
Boston	12	2,300	40	150
Chicago	17	8,400	30	350
Dallas	9	4,100	40	400
Detroit	7	1,000	45	200
Hartford-Middletown-New Haven CT	21	3,700	40	100
Los Angeles	29	7,500	30	400
New York City-Long Island-Newark NJ	46	12,100	40	400
Philadelphia	19	2,900	50	100
Tampa	8	2,500	40	200

Top 10 Metropolitan Regions Burdened by Fossil Fuel Peaker Plants

Source: Strategen Consulting (based on 2018 operational data)

Fortunately, there is a better way to meet peak demand. Thanks to falling costs and technology innovations, battery storage and renewables are now clean, economically viable alternatives to fossil fuel peaker plants. Not only can batteries and renewables deliver a cleaner source of peak energy generation, they can also be distributed throughout communities, providing opportunities for increased energy resilience, decreased energy burdens, and the potential for community ownership and wealth creation—benefiting communities instead of causing them harm.

In order to advance the transition to cleaner peaking resources, a great deal of work must be done to study the impacts of urban peaker fleets and analyze the economics of battery storage and renewable alternatives in these major cities. With this information in hand, local groups and advocates will have the tools to develop and implement strategies to shut down peakers and build support for clean alternatives, as is now being done in New York City. Clean Energy Group is actively working to support these efforts to bring cleaner energy alternatives to underresourced communities in cities across the country.



For more information about CEG's work on phasing out peaker plants, visit www.cleanegroup.org/ceg-projects/phase-out-peakers or contact CEG Project Director and Vice President, Seth Mullendore at seth@cleanegroup.org.