

Pernicious Placement of Pennsylvania Power Plants: Natural Gas-Fired Power Plant Boom Reinforces Environmental Injustice

A massive gas-fired power plant building boom is sweeping the nation, with 421 new gas plants coming online from 2017 to 2021.¹ These plants are not replacing coal-fired or other existing fossil fuel power plants, they are supplementing existing plants. This buildout is not to meet the country's electricity needs, but rather to boost the energy sector's corporate profits by creating new infrastructure to absorb the overabundance of low-priced natural gas. The gas plant expansion sustains fracking's profitability, drives additional gas drilling, locks in fossil-fueled greenhouse gas emissions for decades and has an especially damaging impact on the socially and economically disadvantaged communities where these plants are commonly located.

Polluting facilities like power plants have long been disproportionately located near lower-income areas and communities of color that face substantially higher and unequal pollution burdens. The energy and fracking industry is now pushing for a colossal number of new gas-fired power plants, but state and federal regulators have not assessed the impact of the building boom on the communities where these plants would be located.

Many of the proposed plants are going into Pennsylvania, ground zero in the fracking boom and connected to East Coast population centers by a growing maze of gas pipelines and electric transmission lines. Food & Water Watch analyzed the proposed placement of Pennsylvania's 48 new gas-fired power plants and found that the buildout is reinforcing the historic environmental injustice of the state's existing fossil fuel-fired power plants. The new gas plants would benefit fracking and power companies, but the localized pollution would burden the disadvantaged areas surrounding these new plants.

Historical Patterns of Environmental Justice

The dangers of pollution are not borne equally. Toxic emissions from industrial facilities and power plants impose an unequal pollution burden on socially and economically disadvantaged communities, including communities of color and lower-income, less-educated and rural communities. Decades of academic studies and reports have repeatedly found that exposure to pollution from petroleum refineries, power plants, garbage incinerators and toxic facilities disproportionately affects these disadvantaged communities² that lack the resources or political power to prevent the arrival of unwanted polluters.³

Fossil-fueled power plants have exemplified the disparate pollution exposure that communities of color and lower-income communities face. Recent studies by both the U.S. Department of Energy and the National Association for the Advancement of Colored People (NAACP) found that low-income people of color are more likely to live within three miles of fossil-fueled power plants than the rest of the population.⁴ And a 2017 study found that half of California's gas-fired power plants were located in communities designated as disadvantaged (only 9 percent of the plants were in the *least* disadvantaged areas).⁵ The disproportionate location of polluters in communities of color and lower-income areas worsens toxic health and environmental burdens.⁶

The public health impacts of environmental injustice

Pollution disproportionately impacts the health of the communities where toxic emitters are located — including communities of color and lower-income, economically vulnerable and less-educated communities, which already tend to have worse health outcomes than whiter, more affluent communities.⁷

Power plants release air pollutants like mercury, particulate matter, sulfur dioxide (SO₂) and nitrogen oxides (NO_x).⁸ All fossil fuel plants discharge SO₂ and NO_x, and coal-fired plants are significant mercury emitters.⁹ SO₂, NO_x and particulate matter pollution from power plants contributes to respiratory health problems, such as chronic bronchitis, asthma, emphysema and existing heart disease, and reduces life expectancy.¹⁰ Natural gas-fired plants are major emitters of NO_x, which contributes to ground-level ozone and smog and threatens the environment and human health.¹¹

In Pennsylvania, African Americans and Latinos are considerably more likely to experience health effects from air pollution than whites.¹² The two counties with the largest African-American populations, Philadelphia and Pittsburgh's Allegheny, have a higher asthma risk due to exposure to prolonged and high levels of ozone and particulate matter.¹³ A 2014 study linked Allegheny County air pollution to lower infant birth weights in lower-income areas, leading researchers to conclude that "poor pregnancy outcomes among the less affluent and minority residents of Allegheny County may be partially attributed to higher pollution levels in those neighborhoods," and that this may be attributed to "ongoing environmental justice issues."¹⁴

Pennsylvania's existing and proposed power plants were disproportionately located near socially and economically disadvantaged communities, confirming the findings from other environmental justice power plant studies. This disparate pollution impact was especially severe near Philadelphia and Pittsburgh (see map below).

Communities of color were much more likely to be located near existing power plants at every income level

In Pennsylvania, communities of color were substantially more likely to live within three miles of an existing power plant than whiter communities. The gap was widest at the

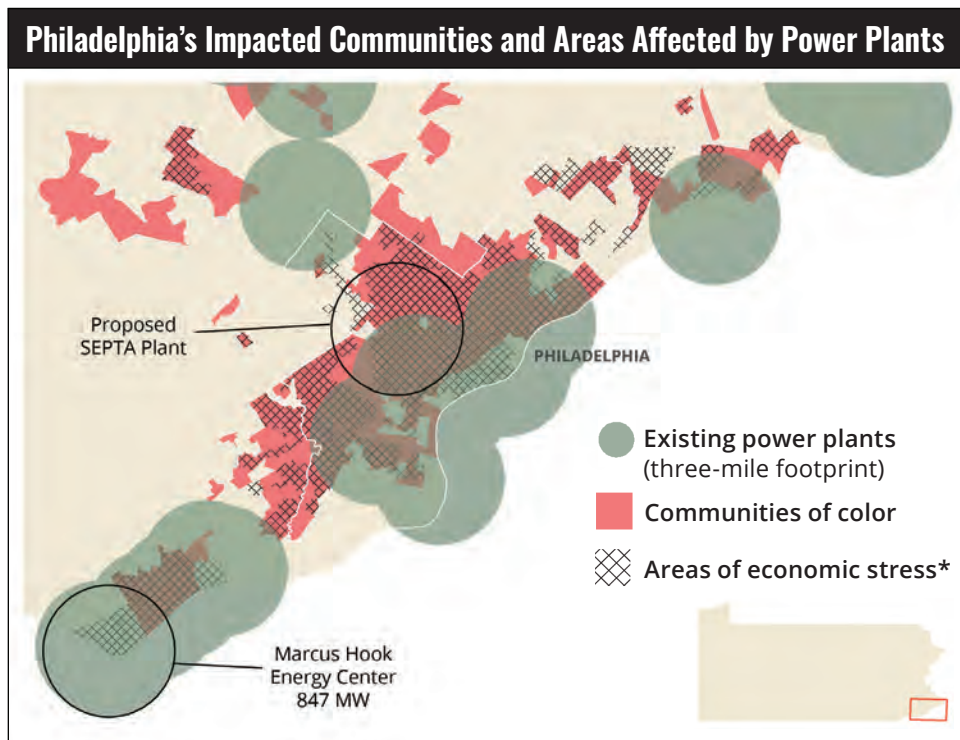
lower income levels but consistent at every income level. Lower-income, minority areas were almost four times more likely to be located near power plants than lower-income, overwhelmingly white areas.

The disproportionate impact hits even the most affluent communities of color. Upper-income minority areas were twice as likely to be living near an existing power plant than the whitest, lower-income areas (see Figure 1 on page 3). This is consistent with the environmental justice literature finding that air pollution disproportionately affects lower-income communities and communities of color, where power plants are most commonly located.¹⁵ Even today, the racial composition of neighborhoods can be a strong predictor of where polluters locate their facilities, compounding the historical discriminatory zoning and land-use policies and practices that reinforced racial segregation.¹⁶

Proposed gas plants reinforce overall disparities for economically disadvantaged communities and communities of color

Although Pennsylvania's new and proposed gas-fired power plants are overwhelmingly located in more rural areas, where whites make up the vast majority of the population, the addition of these plants nonetheless buttresses the environmental injustice for disadvantaged communities and communities of color. The combination of the proposed gas-fired plants and existing plants very modestly increases or maintains the likelihood that families in these disadvantaged areas would live within three miles of any plant. And Pennsylvania appears to be turning a blind eye to this environmental injustice.

For example, two power plants are proposed near Reading. One proposed plant would overlap multiple neighborhoods where people of color make up more than 30 percent of the population. That plant also closely overlaps an existing, smaller oil plant, meaning that these communities would be near two polluting plants. The other proposed plant, in nearby Birdsboro, is located in an overwhelmingly white area with generally higher incomes and lower poverty rates than near the Reading plant.¹⁷ The Pennsylvania Department of Environmental Protection (DEP) actively solicited input through public hearings for the controversial Birdsboro plant but canceled a planned hearing on the Reading plant, even though that plant fits the definition



*Census tracts with higher concentrations of economic stress (including poverty rate over 20 percent, unemployment rate over 15 percent, household SNAP participation rate over 20 percent or areas below 80 percent of state median household income)

of an environmental justice area, which should require an enhanced participation process.¹⁸

More plants are coming, and some of the known proposals pose substantial environmental injustices.¹⁹ For example, the Southeastern Pennsylvania Transportation Authority (SEPTA) has proposed a new gas-fired power plant in an overwhelmingly African-American community in North Philadelphia.²⁰ More than 90 percent of the residents within one mile of the proposed plant were African American, and the Nicetown neighborhood already endures some of the highest particulate pollution in the country and has the highest rate of childhood asthma hospitalizations in Philadelphia.²¹

The gas plant boom imperils lower-income, less-educated, rural communities

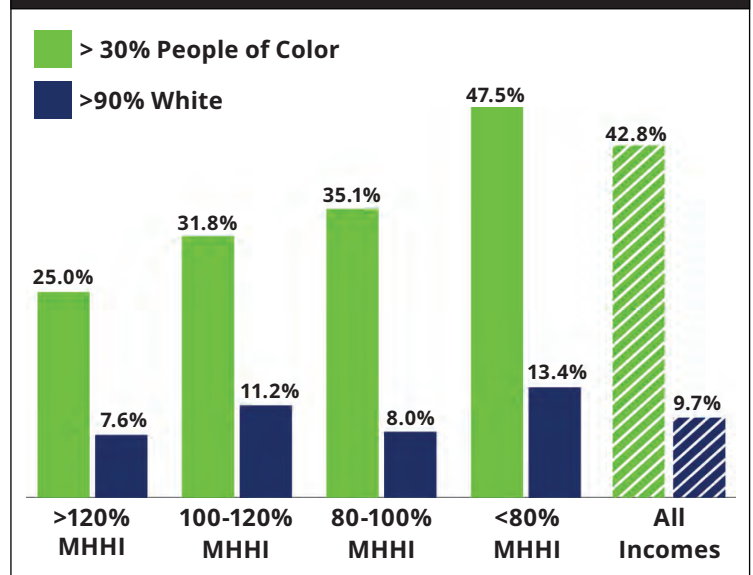
Many of the proposed gas plants are located in rural areas near the fracking fields in northeastern and western Pennsylvania as well as near pipeline and electricity transmission routes. More than 83 percent of the communities within three miles of the proposed plants were rural.²² These findings confirm the academic literature that finds that polluting facilities are disproportionately located in rural areas that have the least political power and higher levels of economic stress.²³

The addition of power plants to the areas with nearby major shale plays compounds the environmental damage where shale gas development is occurring in lower-income, rural areas, particularly in Appalachia where natural resource development has been linked to “a history of marginalization, extraction-related health issues, and a cycle of poverty.”²⁴ Natural gas development has often turned rural areas into sacrifice zones.²⁵ The proposed plants are disproportionately planned for rural areas with lower educational levels and higher levels of economic vulnerability. The combination of proposed and existing plants reinforces overall disparities for lower-income, less-educated and economically stressed rural communities.

Conclusion and Recommendations

The rush to build natural gas-fired power plants presents very real environmental justice impacts. Gas plants last for de-

Figure 1 • Proportion of Census Tracts Within Three Miles of Existing Power Plants by Race and Median Household Income (MHHI)



Median household income relative to statewide median of \$53,600

grades — many are already over 40 years old and are still emitting climate and air pollutants. Building these plants locks us into a fossil-fueled energy future, imperiling the climate and exposing socially and economically disadvantaged communities to disproportionate cumulative pollution burdens.

Pennsylvania and the nation must rapidly transition from fossil fuels to 100 percent clean, renewable energy. The nation must immediately ban fracking and halt new fossil fuel infrastructure like pipelines and gas export terminals.

Instead of doubling down on dirty energy by rubber-stamping a rapid expansion of new gas plants that can reinforce long-standing environmental injustice, the U.S. Environmental Protection Agency and state environmental agencies must aggressively investigate the potential cumulative environmental impacts that these plants can have on disadvantaged communities. State and federal agencies must give environmental justice communities genuine opportunities to participate meaningfully in power plant and other toxic siting decisions that affect their communities and their lives.

Endnotes

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