

# Importance of Preserving Existing Nuclear

Alan Ahn | September 2021

Preservation of the U.S. nuclear fleet has immense consequences for meeting our climate and environmental goals. According to a [Union of Concerned Scientists \(UCS\) report in 2018](#), “[m]ore than one one-third of US nuclear plants are unprofitable or scheduled to close,” and this situation has only become worse in recent years.

Given that our [nuclear plants generate over half of our carbon-free and emissions-free electricity](#), premature nuclear closures have enormous implications for meeting our climate and emissions reductions targets.

## **Early nuclear retirements are replaced by fossil fuels...**

**Contrary to belief, closed nuclear plants are not replaced by clean energy sources, but are overwhelmingly displaced by fossil fuel generation.**

- [Bloomberg Green reported](#) that the void left by New York’s Indian Point would mostly be replaced by natural gas and thus, “would be a step backwards for a state moving aggressively toward carbon-free electricity by 2040.”
- Similarly, the Los Angeles Times reported there was [official acknowledgement that natural gas consumption would increase following the closure of Diablo Canyon](#): “the Public Utilities Commission cited Diablo’s retirement as one of several reasons gas demand is expected to increase in the coming years.”
- “Without new policies, natural gas and coal will fill the void. Closing unprofitable and marginal at-risk plants early could result in a 4 to 6 percent increase in US power sector emissions.” ([UCS, Nov. 2018](#))
- The [Rhodium Group estimated](#) “that over 75% of the lost generation from at-risk nukes would be replaced by fossil generation, largely from natural gas combined cycle (NGCC) power plants.”

## **...increasing both climate and non-climate emissions...**

As nuclear closures are replaced by fossil fuels, **there are not only increases in greenhouse gases, but also other pollutants that affect public air quality and cause direct health effects, including lung damage and respiratory inflammation.**

- The [Brattle Group reports](#) that nuclear plants “prevent substantial emissions of a number of pollutants, including CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and particulate matter (both PM<sub>2.5</sub>

and PM10), by avoiding the natural gas and coal-fired generation that would replace their output if they were shut down prematurely.”

- Thus, announced nuclear plant closures in Ohio and Pennsylvania “would lead to a substantial increase in emissions of CO<sub>2</sub> and criteria pollutants including SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, since the non-emitting nuclear generation would be replaced by increased fossil generation.” ([Brattle Group, Apr. 2018](#))
- As shown, not only are there increases in climate pollutants, but also emissions that directly impact public health. With regards to the closure of Diablo Canyon, [UCS estimated in 2021](#) “that the increase in emissions of one type of air pollutant, nitrogen oxides (NO<sub>x</sub>), would be roughly equivalent to the NO<sub>x</sub> emissions from 1,890 diesel school buses operating over the next decade.”

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- Mark Specht ([Union of Concerned Scientists](#)) on the Diablo Canyon shutdown (Feb. 2021)

## **...and impacting frontline and fenceline communities.**

**The effects of climate and non-climate emissions disproportionately affect low-income neighborhoods and historically disadvantaged communities.** Therefore, nuclear plant closures have clear ramifications for environmental justice and equity considerations.

- Based on information from PSE Healthy Energy in 2017, the closure of San Onofre led to growth “in air pollution emissions like nitrogen oxides (NO<sub>x</sub>), which disproportionately affect the health of California’s disadvantaged communities.” ([UCS, Feb. 2021](#))
- According to a [2018 Brattle Group report](#): “The largest emissions impacts tend to be generally near the nuclear plants in question. Thus the loss of New Jersey nuclear plants would result in a NO<sub>x</sub> emissions increase of over 1,600 tons annually within New Jersey, all of which is designated as an ozone nonattainment area.”
- “It’s sad to hear and it’s no surprise that the closing of Indian Point has led to more natural-gas usage... In typical New York fashion, we’re now being reactive instead of proactive.” - Carlos Garcia, NYC Environmental Justice Alliance ([New York Times, Apr. 2021](#))

## **Policy Recommendations**

In April 2021, Third Way released a memo, “[Congress Must Act to Save America’s Largest Source of Carbon-Free Energy](#),” arguing that the “best way to ensure nuclear plants remain economically competitive and able to stay online is to value the

carbon-free power they contribute to the grid.” The recently announced Bipartisan Infrastructure Deal includes a civil nuclear credit program to support at-risk units. However, it is recommended that we continue to pursue a nuclear production tax credit (PTC), as [proposed by Sen. Cardin and Rep. Pascrell](#), in the tax section of a reconciliation package. An additional proposal for reconciliation that is important for all types of carbon-free power sources is the Clean Electricity Payment Program (CEPP). As nuclear would be eligible as a source of clean power, the CEPP could serve as an additional pathway to support the existing fleet.

### **See Also:**

- [“Potential Human Health Impacts Associated with Retirement of Nuclear Power Plants in Illinois,”](#) by Clean Air Task Force (April 14, 2021)
- [“Pathways to Build Back Better: Investing in 100% Clean Electricity,”](#) by Rhodium Group (March 23, 2021)
- [“Nuclear Impact on NOx Emissions in Designated EPA Ozone Nonattainment Areas,”](#) by Brattle Group (May 2018)
- [“End of an era: closure of nuclear plant is pointer for New York’s energy future,”](#) by Edward Helmore (The Guardian – May 2, 2021)
- [“Indian Point Is Shutting Down. That Means More Fossil Fuel,”](#) by Patrick McGeehan (New York Times – April 12, 2021)