

## Draft EJ Letter to the EPA about Section 111d

Dear \_\_\_\_\_,

Thank you for the opportunity to provide pre-proposal input to the EPA for developing emissions guidelines for greenhouse gasses under Sec. 111(d) of the Clean Air Act. This is a submission to EPA Docket No. EPA-HQ-OAR-2022-0723. In particular, we would like to address a part of the first of the five questions on which you are seeking input: namely, the feasibility, cost, air pollution impacts, and related climate, public health, and environmental justice considerations for including carbon capture, utilization, and storage (CCUS) in developing proposed emission guidelines under Clean Air Act (CAA) section 111(d)..

As we elaborate further below, CCS is a dirty and dangerous strategy used by the oil industry to prolong reliance on fossil fuels and other dirty energy.

### CCUS is Incompatible with Environmental Justice

Point-source carbon capture (hereafter referred to as CCUS) has consistently failed to deliver promised emission [reductions](#). Even if it were to achieve the goal of capturing some carbon dioxide emissions at the source, this best-case scenario would still enable and extend the very fossil fuel reliance that harms frontline communities in numerous ways beyond smokestack emissions. CCUS is touted as a mitigation technology that can allow the continued use of fossil fuels by purportedly reducing their carbon dioxide emissions. In other words, even if it worked as advertised, CCUS leaves in place the entirety of the harmful environmental impacts of fossil fuel production, processing, transport, and combustion, except for at best small reductions in carbon dioxide emissions. Any assessment of the environmental justice impact of CCUS has to incorporate this lifecycle analysis approach.

### *Environmental Injustice at the Point of Production*

CCUS has an “energy penalty.” This means that a facility with CCUS requires [greater fossil energy input for a given energy output](#), as the Intergovernmental Panel on Climate Change (IPCC) concludes in Chapter 6, Section 6.4.2.5, of *Climate Change 2022: Mitigation of Climate Change. Working Group III Contribution to the IPCC Sixth Assessment Report*.

In the case of an electric power generation facility, that would be the output of electric energy. The energy penalty, in turn, requires increased fossil fuel production. Taking the example of a gas-fired power plant, increased gas use because of the energy penalty translates into more [water contamination](#) and [toxic air pollutants](#) from [hydraulic fracturing](#) as well as [conventional drilling](#). These harmful ecological impacts lead to serious public health impacts, such as [cancer](#), [asthma](#), and [preterm birth](#). Multiple studies have shown that [Black, Indigenous, and Latinx communities](#) are much more likely to be exposed to toxic [air pollution](#) and [water pollution](#) from oil and gas

production than the overall population. CCUS not merely perpetuates, but worsens, environmental injustice from fossil fuel production.

### ***Environmental Injustice at the Point of Combustion***

The energy penalty for CCUS drives more pollution at the site of combustion as well. If a power plant has to burn more fuel for a given output of electricity in order to make CCUS work, it will produce more particulate matter (PM2.5), nitrogen oxides, and other toxic air pollutants. This has been [verified](#) by multiple studies, including a [study commissioned by the European Union](#) to support their CCUS implementation goals.

Toxic air emissions from power plants and other industrial facilities are also a serious environmental justice issue. Numerous scientific studies establish that [location of power plants](#) and [exposure to power plant pollution](#) are highly correlated with demographic variables, especially race. Retrofitting these power plants with CCUS and allowing them to keep operating, and keep polluting communities with PM2.5 and other toxic pollutants, instead of phasing them out and replacing them with non-polluting renewable energy, would be a conscious policy choice to perpetuate environmental racism and injustice. So, too, would authorizing new fossil fuel power plants with CCUS, **on the pretext that the incorporation of CCUS addresses concerns about increased greenhouse gas emissions.**

### **Capture Concerns**

As was mentioned in the previous section, CCUS actually has the potential to *increase* emissions, although proponents tout it as an option for emissions mitigation. While CCUS technologies are designed to capture carbon dioxide, the technology does [little to nothing](#) to capture the other types of air pollution created by the process.

Furthermore, CCUS fails to substantially decrease the pollution it promises to address, carbon dioxide emissions. The IPCC's *Climate Change 2022: Mitigation of Climate Change* report shared that CCUS has [far less potential](#) for emissions mitigation than solar or wind energy – and is far more costly. Indeed, the [vast majority](#) of global flagship CCUS projects have failed to meet their CO2 capture targets in the past half century. CCUS's potential to increase air pollution and its inefficacy in reducing CO2 emissions makes the technology a poor choice for emissions reduction.

In addition to the potential for increased air pollution, CCUS also increases water consumption and potential water pollution. One assessment found the potential for a [drastic increase](#) in water consumption, noting, "...increase in water consumption per megawatt of electrical output (MWh) can be as high as 90 per cent." Given that many areas around the country are suffering from

drought and water shortage, CCUS places an unnecessary drain on those resources for minimal, if any, benefit.

Given CCUS's potential to increase harmful air emissions, fail to significantly cut CO2 outputs, and place strain on water resources, particularly at the site of capture, we believe it would be a grave mistake to favorably consider CCUS as an emissions mitigation measure.

### **Risk of Pipeline Ruptures**

Another concern we share pertains to the risk of CO2 pipeline ruptures. The disaster that occurred in Satartia, Mississippi in February 2020 has been well documented; due to the rupture of a CO2 pipeline near the village, nearly 50 people sought medical treatment. Since that time, several of those people have had [lasting lung and brain damage](#). Although the United States' Pipeline and Hazardous Materials Safety Administration (PHMSA) has initiated a new rulemaking process to address the precarity of CO2 pipelines, the underlying issues that caused the Satartia rupture and could cause ruptures elsewhere remain.

Carbon dioxide pipelines are vulnerable to rupture, and the danger they pose to clean air is immense. Impurities in CO2 streams run through pipelines can create corrosive agents that weaken the pipeline and make a rupture more likely. Even the presence of water in the pipeline can generate carbonic acid, which can corrode the pipe. [Currently, pipeline operators are not required to report or verify the purity of their carbon dioxide streams if they are under 90% purity.](#) This regulatory gap increases the risk of eventual CO2 pipeline ruptures and the subsequent air pollution that would accompany those ruptures. In addition to the problem of CO2 stream purity, other vulnerabilities of carbon dioxide pipelines include the high pressures at which CO2 is transferred through the pipe, the need for further research on appropriate steel grades for the pipelines, and the risk that shifting ground or subsidence could cause a rupture (as witnessed in Satartia, Mississippi).

In the event that a carbon dioxide pipeline ruptures, the subsequent air pollution and its risks would be significant. Carbon dioxide has many dangerous properties, including: carbon dioxide is heavier than air and displaces oxygen; carbon dioxide is an asphyxiant at high concentrations; even at lower concentrations, the gas is an intoxicant and could interfere with victims' efforts to evacuate; and carbon dioxide interferes with [the functioning of internal combustion engines in vehicles, which could make evacuation difficult or impossible and impede emergency vehicle access](#). If a pipeline ruptured and high amounts of carbon dioxide entered the air, the risk of injury or loss of life for humans and wildlife would be worryingly high. [Current proposals of CO2 pipeline infrastructure map tens of thousands of miles of pipelines across the country, including in communities already burdened by polluting infrastructure.](#) For these reasons,

among others, we believe the EPA should not favorably consider CCUS in developing new emissions guidelines under the Clean Air Act section 111(d).

### **CCUS and Greenwashing**

As previously stated, CCUS has consistently been purported to be a tool that will improve air quality and combat the climate crisis, however it is, in fact, **an industry scheme** that reinforces the longevity of the fossil fuel industry. CCUS is [primarily utilized for enhanced oil recovery \(EOR\)](#), a process of taking captured carbon and injecting it back into the ground to further extract more fossil fuels. Engaging in a process that ensures more carbon is released through greater extraction of fossil fuels is not green technology; it is textbook [greenwashing](#): the act or process of “misleading consumers about [the] environmental performance or the environmental benefits of a product or service.” CCUS does not combat climate change, it entrenches reliance on the environmentally and climate-destructive industry that caused the crisis for generations to come. The fossil fuel industry has already been clear about how [CCUS is their financial lifeline](#) to continue polluting our environment, destroying our planet, and negatively impacting the health of our communities. [Curbing the extraction and utilization of fossil fuels](#) is the actual solution to addressing carbon emissions, not building long-term infrastructure **that will create harmful environmental impacts.**

### **The Inefficacy of CCUS/In Conclusion**

Finally, beyond the evidence that has been presented that CCUS does not provide the climate, air, water, and/or community saving results that it has been claimed to provide, [CCUS has repeatedly been proven to be unviable](#). It is an [ineffective, inefficient, and insufficient](#) carbon sequestering venture. From carbon storage leaks that exacerbate pollution in already overburdened communities, [to the high cost requirements of investment in a process that produces minimal results of actual carbon captured](#), CCUS has been proven to be antithetical to environmental justice and the **urgent fossil fuel phaseout** needed to address the climate crisis.

The organizations listed below assert that the best way to invest in our communities, our health, our environment, and our future is to not rely on or support CCUS, **but to accelerate the end of reliance on fossil fuels and ensure the shutdown and phaseout of fossil fuel power plants.** **In developing new emissions guidelines under the Clean Air Act section 111(d), the EPA’s goal must be to reduce pollution, not to promote CCS.**

Signed,

*Center for International Environmental Law (CIEL)*  
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*350.org*