

Ozone Release FAQs

Q: Where does this data come from?

A: Clean Air Task Force's *Gasping for Breath* report estimates health effects that can be attributed to ozone linked to air pollution from oil and gas facilities. The analysis in the report is based on EPA's projection of 2025 emissions from EPA's National Emissions Inventory.

Q. How did you isolate effects from O&G development from the larger ozone smog problem?

A: Calculated by comparing a "baseline" model run which estimates ozone pollution in 2025 as currently expected, to a model run with all oil and gas air emissions removed. The difference is the impact that can be attributed to emissions from oil and gas facilities. Note, this is different from the reductions from the policy proposals we are recommending, which would achieve ~45-50% emissions reductions from oil and gas facilities, not 100% reductions. The model does not account for increased ozone due to warmer temps caused by global warming nor does it capture the ozone smog directly created by methane itself.

Q: How many people in the United States are affected by asthma?

A: An estimated 23 million people have asthma in the U.S., including an estimated 6.1 million children. Asthma disproportionately affects children, families with lower incomes, and minorities, including Puerto Ricans, Native Americans/Alaska Natives and African-Americans.

Q: What is a reduced activity day?

A: Reduced activity days are when individuals reduce most usual daily activities and replace them with less strenuous activities or rest, yet not to the point of missing work or school. In this report, these days are counted for adults only.

Q: What counts as a hospital admission?

A: In this report, hospital admissions are only counted for seniors - one of the most vulnerable populations to the threats posed by ozone smog. These are different than simply emergency room visits where people are treated and then sent home.

Q: What are "unhealthy air days"?

A: Unhealthy air days are days above 70 ppb ozone. EPA states that ozone levels above 70 ppb are unhealthy for sensitive groups. Sensitive groups include people with lung disease such as asthma, older adults, children and teenagers, and people who are active outdoors. EPA suggests that people in such sensitive groups should *reduce* prolonged or heavy outdoor exertion, take more breaks, do less intense activities, schedule outdoor activities in the morning when ozone is lower, and keep quick relief medicine handy.

Q: Why the focus on the summer months in this report?

A: "Ozone season" is the 5 month period from May 1 through September 30th. We present ozone season health impacts rather than annual health impacts because this was the

approach used by EPA in the analysis they did to support the new health-based ozone standards they set in 2015. In addition, most of the health studies focus on the summer season only, and most of the high ozone days take place during the ozone season.

Q: What is the difference between total health impact (used for ozone health impacts) and health risk (used for air toxic health impacts)?

A: The ozone health impact data is presented in terms of total number of asthma attacks, lost school days, etc. In contrast, the air toxics health risk data is presented in terms of risk per million people exposed. Thus, small changes in ozone smog concentrations in areas with large total populations can have a large total health impact numbers. However, small health impact numbers in rural or more sparsely populated areas does not indicate a lower health risk, it simply reflects a smaller total number of incidents.

Q: According to your asthma pollution threat map, it appears that very few people are affected by oil and gas operations in major energy-producing basins such as the Bakken formation in North Dakota and the San Juan Basin in New Mexico and Colorado. Does this mean that ozone pollution from oil and gas operations are NOT a problem in rural areas?

A: No, oil and gas pollution is certainly a problem in some rural areas. What we present in this report is total health impact numbers, rather than health risk (see above). Even if the risk is relatively large in rural, sparsely populated areas, the total number of negative health outcomes (like asthma attacks) will be small, because small numbers of people are exposed. In fact, the ozone health risk is indeed high in many places close to oil and gas facilities.

Q: Aren't oil and gas operations suspected to be a bigger problem for wintertime ozone in places such as the Uintah Basin in Utah. Why is that not reflected in this report? Does that underestimate ozone impacts from oil and gas development in these regions?

A: Unfortunately, the processes that create this wintertime ozone are also not captured in the atmospheric model that we used. (These processes have only been recently worked out scientifically, and there is a lag before they can be included in models). As a result, our ozone impact numbers underestimate the true health impacts in these regions.

Q: Why are people in cities such as Chicago and other cities with no oil and gas activity nearby having asthma attacks from ozone smog from oil and gas operations happening so far away?

A: Some of the air pollutants that oil and gas sites release in the atmosphere last for a relatively long time in the atmosphere before they react chemically to form ozone. This means they can travel for hundreds or thousands of miles before reacting, and the ozone smog that is formed from this pollution will extend over large distances. (Oil and gas pollution isn't unique in this way. Older, outdated power plants can also cause ozone smog hundreds of miles away.)

Q: What about pollution from other industries?

A: To attribute pollution and health impacts to oil and gas in this work, we compared the results of two air quality model simulations. The only difference between the two was that in one, we removed all air pollution from oil and gas sites. All other sources of pollution - such as pollution from other industries - were kept the same in the two simulations. Then, we look at the difference in ozone health impacts in the two simulations to attribute the health impacts (such as asthma attacks) to oil and gas. So, the health impacts on which we focus are due to oil and gas air pollution, not pollution from other industries.

In this report, we focused on the oil and gas industry, which is a major source of the pollutants that make ozone smog - oil and gas is responsible for about a quarter of VOC pollution nationwide, and VOC is one of the precursors of ozone smog. Oil and gas has not been subject to air pollution standards in the way that other major polluters have. The standards for oil and gas that we are advocating for are commonsense measures requiring well-established, cost-effective technologies and practices that are already required in places like Colorado and Wyoming.

Q: What about pollution from China? Isn't pollution from China causing high levels of ozone in the United States? How do we know the US oil and gas operations are actually causing this pollution?

A: Pollution from overseas can sometimes be detected in the US (especially high in the atmosphere, where it is not actually harming people, but occasionally at ground level). However, the high-ozone days that harm our health are overwhelmingly caused by US pollution: from Los Angeles to New England, the vast majority of the pollution making ozone smog comes from local sources or regional sources in the US. In this work, we used the latest information on emissions from the US EPA and up-to-date modeling to calculate the health impacts from ozone smog that can be directly attributed to oil and gas emissions. To attribute pollution and health impacts to oil and gas, we compared the results of two air quality model simulations. The only difference between the two was that in one, we removed all air pollution from US oil and gas sites. All other sources of pollution - including pollution from overseas - were kept the same in the two simulations. Then, we look at the difference in ozone in the two simulations to attribute ozone to oil and gas. So, while pollution from overseas occasionally affects the air quality on the ground in the US, the health impacts on which we focus are due to oil and gas air pollution, not overseas emissions.

Q: If you are calling for new restrictions on emissions from existing sources, how does that interact with the work that EPA is doing to specifically regulate ozone already?

A: The two efforts are complementary. Cleaning up oil and gas operations is a win-win: it curbs emissions of VOC, a precursor of ozone smog, and it reduces climate warming from methane pollution. Both ozone smog and climate change have major impacts on human health.

Q: How much of this problem could be addressed by federal methane regulations?

A: A limited number of common-sense, cost-effective, and feasible standards to reduce methane pollution from oil and gas sites would have an additional benefit of reducing VOC emissions from these sites by up to half, significantly reducing ozone smog from oil and gas.

Q: The BLM is expected to release new rules that will reduce oil and gas emissions from existing and future sources on public and tribal lands later this year. Will that have an impact on ozone emissions and, if so, how?

A: Yes. The BLM rules, which are designed to reduce waste of natural gas from leaks and venting of natural gas from sites on public lands, will have the additional benefit of reducing VOC emissions from these sites. That's because the natural gas that leaks or is vented from oil and gas sites contains VOC. By reducing these leaks and vents, the BLM rules will reduce VOC pollution.