

FOSSIL FUELS burned or produced in oil refineries, drilling, power plants, cars, trucks, & more, hurt everybody, and we can do a lot better

Burning or producing Crude Oil, Gasoline, Diesel, Natural Gas, & Coal hurts our HEALTH

(These Fossil Fuels are formed over millions of years from plant and animal materials.)

- Fossil fuels cause regional smog & emissions of hundreds of toxic chemicals: Oil refineries, power plants, cars, and trucks burning fossil fuels emit VOCs, NOx, CO, particulate matter, and other pollutants, causing formation of ground-level ozone on hot days. (See reverse for information on health impacts.)
- Low income & communities of color are hit the worst:
 - Communities of color are exposed to significantly higher levels of NOx than whites, causing 7,000 additional deaths per year. (Clark et al, [Nat'l Patterns in Envir. Injustice & Inequality: Outdoor NO₂ Pollution in the US](#), U of Minn, 2014.)
 - People living next to freeways [are also more likely to have heart & lung problems, asthma and increased death rates](#), with communities of color having significantly higher risk.

Burning Fossil Fuels threatens the planet through CLIMATE CHANGE

- Climate Change due to human emissions of CO₂ & other pollutants causes extreme weather, including droughts, floods, [illnesses and deaths caused by heat waves](#), [increased wildfires](#), more frequent high energy hurricanes, [sea level rise, ice cap & glacier melt](#), and even more snow from higher precipitation levels. Climate change is leading to animal extinctions.
- Climate change severely threatens everybody, but hurts poor people the worst, [through food shortages & weather disasters](#), [more "bad air" days due to higher temperatures](#), and [severe air quality due to increased wildfires](#). According to a [Pentagon report](#) leaked to the [NY Times in 2004](#), climate change can also cause wars over rapidly depleting resources.

We have alternatives to Fossil Fuel Energy that we can use right now!

- Efficient Appliances & Demand Management
- Energy Storage & Wind
- Improving Transmission
- Rooftop Solar
- Electric Vehicles & Funding Public Transit

Support CBE to clean up fossil fuels - Donate today: www.cbecal.org/donate/join-cbe




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OIL REFINERY, DRILLING, CAR, & TRUCK POLLUTANT Potential Health Impacts

	Breathng. Irritation	Eye Impacts	Nervous System	Additional Potential Impacts
Hydrogen Sulfide (H ₂ S) in crude oil, refineries, oil & gas drilling, & air near these sources.	✗	✗	✗	Reportedly highest cause of sudden workplace death, & lower levels released into communities -- <u>LOWLEVELS</u> : Strong smell (rotten egg), eye, nose, throat irritation; continued exposure can cause inability to smell H ₂ S. <u>MODERATE LEVELS</u> : nausea, vomiting, headache, dizziness, cough, breathing difficulty. <u>HIGH LEVELS</u> : shock, convulsions, coma, death.
Benzene, Toluene & Xylene in refineries processes & gasoline	✗	✗	✗	Reproductive / developmental hazards, additionally, Benzene can cause cancer (leukemia.)
Hydrogen Fluoride (HF) used in fracking.	✗	✗	✗	Extremely hazardous – can burn eyes, skin, and lungs, high levels can cause convulsions and death.
PAHs - Polycyclic Aromatic Hydrocarbons - Can cause cancer -- PAHs are created when products like coal, oil, gas, & garbage are burned incompletely, & can exist in over 100 chemical combinations.				
MANY OTHERS CHEMICALS ARE EMITTED BY OIL REFINERIES: Acetaldehyde, arsenic, antimony, beryllium, 1-3, butadiene, cadmium compounds, carbonyl sulfide, carbon disulfide, chlorine, ethylbenzene, formaldehyde, hexane, hydrogen chloride, nickel compounds, phenol, heavy metals including lead and mercury, hormone disruptors (dioxins and furans), plus greenhouse gases carbon dioxide, methane and others. You can look up more health impacts in EPA's Health Effects Notebook for Hazardous Air Pollutants .				
SMOG-forming chemicals emitted by burning or evaporating fossil fuels in Refineries, Drilling, Other Industries, Cars, & Trucks, causing ground-level ozone formation on hot days.				
 <p style="text-align: center;">(graphic excerpted from American Lung Association 2014 State of the Air / Ozone pollution webpage)</p>				
Nitrogen oxides (NO _x)	✗			Cause increased death rates due to heart disease -- Communities of color are exposed to significantly higher levels of NO _x than whites, causing 7,000 additional deaths/yr. (Clark et al, National Patterns in Environmental Injustice and Inequality: Outdoor NO₂ Air Pollution in the United States , Univ. of Minnesota, 2014.)
Ozone (at ground-level, not upper atmosphere)	✗	✗		Respiratory harm including reduced lung function, airway inflammation, coughing, burning or discomfort in chest with deep breaths, wheezing, or shortness of breath, increased hospitalizations, potentially early death.
Carbon Monoxide (CO)			✗	CO reduces oxygen delivery to the heart, brain, tissues, and blood, especially harmful to people with heart disease.
VOCs	Volatile Organic Compounds or Hydrocarbons react on hot days with NO _x to form ground-level ozone (smog). This class of chemicals can range from very toxic (like benzene) to less toxic, simpler hydrocarbons.			
Particulate matter (PM)	Causes premature death in people with heart or lung disease, plus nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, irritation of airways, coughing or difficulty breathing. The tiniest particles are formed by combustion of fuels, and can penetrate deep into the lungs.			
Diesel Particulate Matter	Causes cancer - Trucks and equipment burning diesel fuel emits diesel particulate matter. People living next to freeways are more likely to have heart & lung problems, asthma and increased death rates , with communities of color having significantly higher risk (although this exposure includes additional pollutants).			

For all pollutants, dosage matters – higher levels and repeated exposure are worse than small doses, but we can prevent these potential impacts by phasing out use of fossil fuels in favor of clean renewables!

