

## CLIMATE 101: WHAT ARE FOSSIL FUELS?



### THE BASICS

Fossil fuels are non-renewable sources of energy (such as coal, oil, and natural gas) formed in the earth over hundreds of millions of years from the buried remains of plants and animals. Fossil fuels are burned to generate heat and electricity. **But burning fossil fuels also releases greenhouse gases (GHGs) like carbon dioxide.** These gases trap extra heat in the atmosphere, causing temperatures to rise and our climate to change.

### QUICK FACTS

- Burning fossil fuels is *the number one cause of climate change*. The GHGs we release while doing so far more to warm the planet and disrupt our climate than any natural factors.
- [According to a 2015 report](#), taxpayers subsidize fossil fuels to the tune of \$5.3 trillion every year. That's your money going to subsidize [some of the world's most profitable companies](#).
- Countries are transitioning away from fossil fuels and thriving. As just one example, [the UK generated over half of its electricity without fossil fuels in 2018](#).

### THREE EXAMPLES OF FOSSIL FUEL ENERGY

#### Natural Gas

Despite its innocent-sounding name, natural gas is a dirty fossil fuel composed primarily of methane, a GHG that's [80 times](#) more potent at trapping heat than carbon dioxide (over a 20-year period). The danger of natural gas isn't just that burning it releases carbon dioxide, which traps heat and drives climate change. Other dangers include:

- Many natural gas pipelines and facilities also leak methane, which helps raise temperatures and change our climate even without burning.
- It's frequently produced through fracking (or hydraulic fracturing). Studies have found that fracking is [one of the least sustainable ways to produce electricity](#), and the chemicals used in the process can have devastating impacts on our water and health.

## **Petroleum (Oil)**

Petroleum starts as crude oil, a thick black liquid found in underground reservoirs, within rock formations, or closer to the surface in tar sands. To extract oil, companies drill wells deep underground, both on land and under the sea.

After crude is refined into petroleum, it's used for gasoline to power the combustion engines in cars and vehicles as well as generators and power plants. When oil is burned, it releases carbon dioxide that traps heat in the atmosphere, fueling climate change.

And accidents can happen everywhere from wells to pipelines. When oil spills onto the land or water, it devastates the local environment and economy. Spills happen all the time – between 2010 and 2016, there were [1,300 pipeline spills in the US alone](#) (or about one every other day).

## **Coal**

Coal is a dark sedimentary rock that is highly combustible and burned to generate electricity. Coal comes from plant material that decays and – with an enormous amount of time and pressure — turns into the hard rock we know today.

**When it comes to the climate, coal is Public Enemy Number One. Worldwide, more of the carbon pollution driving climate change comes from burning coal than any other source.** But as with other fossil fuels, the dangers don't end there. Coal is also [devastating for public health](#). The industry tries to pretend coal is safe by using the term “clean coal” – but [there is no such thing](#).

## **WHAT YOU NEED TO KNOW ABOUT FOSSIL FUELS**

### **FOSSIL FUELS COST MORE THAN THE MARKET PRICE.**

Burning fossil fuels drives climate change. And climate change carries tremendous costs for all of us, from the tax dollars to rebuild communities to the human costs of hurricanes, droughts, and floods made worse by the climate crisis.

**More often than not, the market prices of fossil fuels don't reflect this reality.** Government subsidies for the industry (and lack of accountability for its role in climate change) mean fossil fuel prices stay artificially low. This tells Big Polluters that they can dump unlimited carbon pollution into the atmosphere without any consequences. **The rest of us can't afford to keep footing the bill.** That's why there is a growing movement to make these Big Polluters pay the true cost of fossil fuels – it's called carbon pricing.

### **RENEWABLE ENERGY IS A BETTER ALTERNATIVE**

Renewable energy (like wind and solar) gives us a reliable way to power our lives, without releasing dangerous carbon pollution. Plus, renewables can save us money. Many cost the same or less than fossil fuels and experts project that all renewables [could be cheaper than dirty energy by 2020](#).

**It's clear:** We must transition away from dangerous, dirty fossil fuels and invest in clean, reliable energy. Renewable energy is good for our health, our climate, and our economies.