## Business Ethics 8

## Answer all 4 questions at the end, one paragraph for each.

## Article 1.

## How to stop fossil fuel emissions that cause climate change

By [Brad Plumer](https://www.nytimes.com/by/brad-plumer), NY Times, April 21, 2020

To stop global warming, we’ll need to zero out greenhouse gas emissions from billions of different sources worldwide: every coal plant in China, every steel mill in Europe, every car and truck on American highways.

It’s such an enormous task that it can be tough to figure out where to begin.

As a reporter covering climate policy, I’ve spoken to hundreds of experts and read through [countless](http://deepdecarbonization.org/countries/) [dense](https://www.iea.org/reports/world-energy-model/sustainable-development-scenario) [reports](https://www.post2020hlp.org/wp-content/uploads/docs/Rockstroem-Sachs-Oehman-Schmidt-Traub_Sustainable-Development-and-Planetary-Boundaries.pdf) about how countries can slash their emissions. There’s often fierce debate over the best path forward. But I’ve found it helpful to think about all the different proposals out there as essentially boiling down to four broad steps. Consider this a rough game plan for how the world might solve climate change.

##### **Clean up electric power plants**

Today, [roughly one-quarter](https://www.wri.org/blog/2020/02/greenhouse-gas-emissions-by-country-sector) of humanity’s emissions come from power plants that generate the electricity we use for our lights, air-conditioners and factories. Most power plants still burn coal, natural gas or oil, producing carbon dioxide that heats the planet.

The good news is there are lots of available technologies that can produce electricity without emissions. France cleaned up its grid with nuclear power. California is aiming for zero-emissions electricity by 2045 by installing solar panels and wind turbines. Some companies plan to capture carbon dioxide from existing coal plants and [bury it underground](https://www.nytimes.com/2020/02/11/climate/carbon-capture-tax.html).

Experts often disagree on which technologies are best, and technical hurdles remain [in cutting emissions all the way to zero](http://news.mit.edu/2018/adding-power-choices-reduces-cost-risk-carbon-free-electricity-0906); better batteries to juggle wind and solar power would help. But there’s broad agreement that we could greatly reduce power-plant emissions with the tools we have today.

##### **Electrify much of our economy**

As our power plants get greener, the next step is to rejigger big chunks of our economy to run on clean electricity instead of burning fossil fuels.

For example, we can replace cars that run on gasoline with electric vehicles charged by low-carbon grids. We can replace gas-burning furnaces with [electric heat pumps](https://www.nytimes.com/2019/05/01/opinion/climate-change-gas-electricity.html). Instead of steel mills that burn coal, shift to electric furnaces that melt scrap. Roughly another one-quarter of global emissions could conceivably be electrified in this fashion.

This daunting task of [“electrifying everything”](https://www.vox.com/2016/9/19/12938086/electrify-everything) becomes easier if we’re also curbing our energy use at the same time. That could entail making cities less dependent on cars, upgrading home insulation and boosting energy-efficiency in factories.

##### **Develop new technology for the hard-to-electrify bits**

Parts of the modern economy, alas, can’t easily be electrified. Batteries are still too heavy for most airplanes or long-haul trucks. Many key industries, like cement or glass, require [extreme heat](https://energypolicy.columbia.edu/research/report/low-carbon-heat-solutions-heavy-industry-sources-options-and-costs-today) and currently burn coal or gas.

One [recent study concluded](https://science.sciencemag.org/content/360/6396/eaas9793) that about one-quarter of emissions fall into this “difficult to decarbonize” category.

Governments and businesses will need to invest in new technologies. Some possibilities: power airplanes with sustainable biofuels from crop waste; use green hydrogen, created from renewable energy, to produce industrial heat; or [suck carbon dioxide out of the air](https://www.nytimes.com/2019/04/07/business/energy-environment/climate-change-carbon-engineering.html) to offset the emissions we can’t eliminate. We’ll have to get creative.

##### **Fix farming**

A final one-fourth of global emissions comes from agriculture and deforestation; think cows belching up methane or farmers clearing swaths of the Amazon for cropland. Figuring out how to feed billions while using less land and producing fewer emissions [will take an array of solutions](https://www.nytimes.com/2018/12/05/climate/agriculture-food-global-warming.html), from improving ranching practices to reducing food waste, but it’s crucial.

This list is simplified, of course, and figuring out how to actually achieve these four steps is the hard part. A [tax on carbon emissions](https://www.nytimes.com/2014/05/30/science/a-price-tag-on-carbon-as-a-climate-rescue-plan.html) could give businesses incentive to find fixes. Governments could ramp up spending on clean technologies. International cooperation and policies to help dislocated workers are vital. And powerful industry interests who prefer the status quo will fight major changes.

But it’s a basic road map if we want to zero out emissions, which, scientists agree, is what is ultimately needed to keep the world from heating up endlessly.

Article 2.

The oil and coal businesses: influencing key decisions on controlling global warming

By [Hiroko Tabuchi](https://www.nytimes.com/by/hiroko-tabuchi), an investigative reporter on the climate desk who focuses on the fossil fuel industry.

When an administration, Republican or Democratic, proposes a change to a federal rule, it can look like a cut-and-dried affair.

But behind the scenes, rule-making involves extensive lobbying. My job as a journalist looking at the intersection of climate and industry has been to follow the money trail to figure out who’s asking for what, and who’s getting what they want.

That often involves scrutinizing the powerful fossil fuels industry, which for years has lobbied against policies to tackle global warming, and funded efforts to obscure the well-established science that global warming is caused primarily by greenhouse gases generated by burning fossil fuels and other human activities. These efforts are often obscured from public view, but their influence becomes clear in regulatory and lobbying records and by piecing together information from insiders and other sources willing to talk to us.

The industry has gotten results. Since taking office, President Trump has begun [withdrawing the United States from the landmark Paris climate accord](https://www.nytimes.com/2019/10/23/climate/trump-paris-climate-accord.html), signed five years ago by almost 200 countries to help reduce global emissions. At the urging of coal companies like Peabody Energy, the president [halted the Obama administration’s Clean Power Plan](https://www.nytimes.com/2017/10/09/climate/clean-power-plan.html), designed to rein in emissions from coal-fired power plants. (That hasn’t halted the decline of the coal industry, now on even more precarious footing as the Covid-19 outbreak [triggers a slump in coal use](https://www.nytimes.com/2020/04/07/business/energy-environment/coronavirus-oil-wind-solar-energy.html).)

A powerful oil and gas group also backed weaker oversight for emissions of methane, an invisible, particularly potent greenhouse gas; my video colleague Jonah Kessel and I [made some of the gas leaks visible last year with the help of infrared technology](https://www.nytimes.com/interactive/2019/12/12/climate/texas-methane-super-emitters.html).

Led by Marathon Petroleum, the country’s largest refiner, a separate group representing fuel and petrochemical manufacturers [ran a stealth campaign to roll back car tailpipe emissions standards](https://www.nytimes.com/2018/12/13/climate/cafe-emissions-rollback-oil-industry.html), the biggest climate initiative ever adopted by the United States. The rollback has gone so far that it has alarmed even some of the carmakers the measure was supposed to help.

According to the nonpartisan [Center for Responsive Politics](https://www.opensecrets.org/), the oil and gas industry spent more than $125 million in lobbying at the federal level in 2019 alone. The coal mining industry spent close to an additional $7 million on lobbying. And together, fossil fuel companies have already made at least $50 million in political contributions this year, the vast majority to Republican politicians.

In recent years, [as climate activism has gathered steam](https://www.nytimes.com/2019/09/20/climate/global-climate-strike.html), oil and gas companies have made commitments to help combat climate change. As world leaders gathered at the United Nations climate summit last fall to discuss the urgency of slashing carbon emissions, for example, 13 of the world’s biggest fossil fuel companies [announced a set of wide-ranging pledges](https://www.nytimes.com/2019/09/23/climate/oil-industry-climate-investment.html), from supporting a carbon tax, promising to cut down on methane leaks and investing in technology to scrub carbon dioxide from the air.

But there are concerns those efforts could fall by the wayside, as the oil and gas industry, reeling from the global pandemic, reins in spending. As the coronavirus has spread, industry groups have lobbied, successfully, for drastic rollbacks of environmental rules governing power plants and other industrial facilities. [The Environmental Protection Agency has said it will temporarily halt fines](https://www.nytimes.com/2020/03/26/climate/epa-coronavirus-pollution-rules.html) for violations of certain air, water and hazardous waste reporting requirements.

As the historians [Naomi Oreskes](https://www.nytimes.com/2015/06/16/science/naomi-oreskes-a-lightning-rod-in-a-changing-climate.html) and Erik Conway argue in their seminal book, “Merchants of Doubt,” the methods used by industry to deny the harms of fossil fuel use were in many cases the same as those used by the tobacco industry to deny the harms of cigarettes.

At least in the United States, the tobacco industry is in a long decline. It remains to be seen whether the fossil fuel industry will tread a similar path.

**Questions for 8 (a)**

1. **According to the author of the first article above (Brad Plumer), what are the 4 main ways that climate change can be diminished or stabilized? Which of these ways requires the development of new technology?**
2. **According to the author of the second article above (Hiroko Tabuchi) the government finds it very difficult to implement laws that would strictly regulate the emission of greenhouse gases. What are the main reasons why the U.S. government does not act strongly enough to reduce climate change?**
3. **What was good about what businesses and countries did to stop the use of CFCs (see slides from Tuesday’s class)? Explain.**
4. **Can the Paris Agreement protect the world from global warming if all countries adhere to it? Why or why not?**