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Climate Change is Urgent: Time for the U.S. Fossil Fuel Industry to Go Green

Growing up, everybody must have heard of a polar bear story. A polar bear at the North Pole is losing its home as the ice is melting, or it is starving as its food is declining. Whenever I heard this kind of stories, I felt a little pity for the bear. However, I did not care deeply since it was not happening to me. This idea turns out to be not so true, however, because this story is not just a polar bear story; it is now our story. Imagine a huge fire surged into your village. It destroyed all the houses, including your house, all the grocery stores, and all the cars in the village. Suddenly you don't have safe shelter because you lost your house, and you are starving because all the places that provided food were burned. You need to move to another area to find a place to live in, but the outside is so hot that it is even hard to breathe. Even though this example might feel too dramatic, it is happening to people right now, and it will happen to more of us as the earth keeps warming.

Climate change is a significant global issue that threatens the safety and well-being of the humanity. Among so many causes of climate change, the biggest contributor is the fossil fuel industry, especially in the U.S. Therefore, to help prevent a climate crisis, fossil fuel companies operating in the U.S. need to change their practices. This paper provides the scientific explanation of climate change and its detrimental effects on us. Then, with a special focus on U.S.-tied fossil fuel companies, this paper explores how the fossil fuel industry has played a huge role in contributing to climate change, how specific activities of the fossil fuel companies have led to their huge contribution to the issue, and how the companies can change to prevent a global climate catastrophe.

According to NASA (2021), climate change is "a long-term change in the average

weather patterns" of Earth (para. 6). This change primarily involves and results from global warming, "the long-term heating" of the planet caused by increased greenhouse gases in the atmosphere due to human activities. (NASA, 2021, para. 4). The concerning part of the human-induced global warming and climate change is that they have been occurring at an unprecedentedly fast rate. For example, human activities have caused warming of 1 degree Celsius for the past 100 years, and this is "about 20 times faster than one of Earth's fastest natural climate change events" (Nuccitelli, 2020, p. 142). Unfortunately, this speed appears to be too fast for our planet to deal with.

Historical and scientific data shows that the effect of climate change is detrimental to the environment. According to the Intergovernmental Panel on Climate Change (IPCC) Synthesis Report, climate change warms the atmosphere and ocean, reduces snow and ice, and increases the sea-level of the planet (IPCC, 2014). It exacerbates extreme weather events such as heat waves, heavy precipitation, floods, droughts, cyclones, and wildfires (IPCC, 2014). Climate change also alters our planet's ecosystems; it disturbs the hydrological system, shifts animal species' habitat and behavior, and kills coral reefs (IPCC, 2014). Since those alterations influence our environment, they also affect us, who live on the planet.

Climate change has huge social consequences; it affects our food, safety, and well-being. According to the IPCC (2014), the warming of the atmosphere and the ocean reduces agricultural productivity and fisheries in many parts of the world, threatening our food security. Also, the alteration of hydrological system reduces the quality and quantity of water supply, increasing water competition (IPCC, 2014). Furthermore, the extreme weather events threaten our health, security, and mortality, while also compromising our outdoor activities (IPCC, 2014). Lastly, climate change has caused and will cause huge displacements and migrations of people due to its impacts of extreme weather events and deteriorated livelihoods (IPCC, 2014). Such negative impacts are even more concerning, however,

because not everyone is affected the same way.

Climate change exacerbates inequality in the world. The IPCC (2014) estimates that climate change will make poverty reduction more difficult by reducing food security and creating more poverty traps for low-income people and countries. It is also expected that low-income countries are especially vulnerable to large displacements and the effects of climate change (IPCC, 2014). Furthermore, climate change prevents solving economic inequalities between countries. For instance, a study shows that it is very likely that the impacts of climate change will prevent the economic catch-up of developing countries due to the greater damage and higher mitigation costs they face (Taconet et al., 2020). All of these prove that climate change will impact the lives of the poor more; this situation is not very fair since they have the least emission footprint on the planet.

One region of the world that experiences the unequal consequences of climate change is the Greater Horn of Africa. According to Seife (2021), the Horn of Africa is very vulnerable to the impacts of climate change. Less rainfall, more droughts, and decreased water supply have degraded their soil fertility; this soil degradation has reduced crop yields and livestock productivity in the area, causing a severe famine and huge displacements of people living in the Horn of Arica (Seife, 2021). Also, the decline in the water supply has caused water competition and political unrest between the African countries (Seife, 2021). This fact has a moral implication because while Africa's amount of carbon emission is very low, it is "most vulnerable" to the impacts of climate change (Seife, 2021, p. 100). This example is just one of countless and unfair struggles people face on earth as a result of climate change.

Among the problems that climate change embodies, however, the biggest issue is that greenhouse gas emissions are concentrated to one part of the world: the fossil fuel industry. The sector has contributed hugely to the accumulated gases in the atmosphere. According to

the Climate Accountability Institute (2020), 108 fossil fuel and cement entities emitted 69.6% of global greenhouse gases since 1751, and just 20 companies accounted for 30% of the emission. Furthermore, the fossil fuel companies are expected to emit even more gases in the future. According to an analysis by Heede (2014), the companies have a huge amount of carbon reserves that will exacerbate climate change if pulled out and burned. The amount is so big that no more than a third of the fossil fuel reserves should be consumed before 2050 to prevent a climate crisis (Heede, 2014). The fact that most of our past, present, and future emissions of greenhouse gases are in the hands of just about 100 companies is very concerning, but what is more concerning is that the number of fossil fuel industry's emissions is even more concentrated to just one country: the U.S.

The U.S. fossil fuel industry has especially been a huge contributor to climate change. Even though the U.S. has the highest cumulative greenhouse gas emissions in the world (Ritchie, 2019), it is still burning a lot of fossil fuels. For example, in 2019, 74% of total greenhouse gas emissions in the U.S. resulted from fossil fuel combustion (U.S. Energy Information Administration, 2021). Furthermore, according to the Climate Accountability Institute (2020), just 10 U.S.-tied fossil fuel companies including Chevron, ExxonMobil, BP, and Royal Dutch Shell accounted for about 17.5% of global greenhouse gas emissions since 1965. This data means that companies operating in just one country, the U.S., have caused more than a tenth of climate change consequences that 195 countries in this world are vulnerable to. This concentrated contribution of the U.S. fossil fuel industry is very concerning considering how climate change threatens everyone's lives on earth; this concern raises a question to how we got to this point.

Why did many people not know about the U.S. fossil fuel industry's huge role in causing climate change, and why was the industry not regulated sufficiently? Firstly, the fossil fuel companies in the U.S. have funded climate denial activities so that the public does

not know the danger of their products. Secondly, they have carried out political activities that made the government put favorable regulations and provide subsidies to the industry. Thirdly, the motivation for their unethical actions has been their financial interest. Therefore, the fossil fuel industry's climate denial activities and political activities, rooting from their financial interests, have caused lack of public awareness and government regulations; this fact explains how they have been able to emit a huge share of emissions and contribute to climate change.

Ever since the fossil fuel companies figured out that their emissions were putting our planet at risk, they have been funding hugely to deny climate-related science, and this spending has caused low awareness or even denial of the public in regards to climate change. According to the Union of Concerned Scientists (2015), since 1981, a U.S. fossil fuel company, ExxonMobil, knew from their own research that burning fossil fuels causes climate change. Since ExxonMobil was a member of a huge trade association called the American Petroleum Institute (API), it is very likely that other fossil fuel companies such as BP, Chevron, Conoco, Phillips, and Royal Dutch Shell were all informed of the science by 1998 as members of API (Union of Concerned Scientists, 2015). The companies' actions, however, went the opposite direction from the research; they denied the science. According to the Climate Investigations Center (2019), the fossil fuel companies created the Global Climate Coalition (GCC) in 1989, which served as the "corporate America's primary vehicle" of climate denial until 2002 (para. 2). The GCC is known to have disrupted the Intergovernmental Panel on Climate Change process, which reports global climate science, by attending the meetings and emphasizing only the information that benefited its member companies (Climate Investigations Center, 2019). In 1997, the GCC also funded an American Council on Science and Health (ACSH) report to state how the fossil fuel industry was necessary in preserving human well-being (Climate Investigations Center, 2019). Furthermore, according to Frumhoff et al. (2015), Chevron supported their employees to

attend API-organized rallies in 2009 to show how ordinary people were against climate policies. In 2011, the API even sued the United States Environmental Protection Agency, asserting their lack of authority to regulate greenhouse gas emissions. (Frumhoff et al., 2015). Finally, research by InfluenceMap (2019) shows that the five largest oil and gas majors, ExxonMobil, Royal Dutch Shell, Chevron, BP, and Total, have invested over $1 billion of their equity in "misleading climate-related branding and lobbying" (para. 1). The climate denial activities explain why for a very long time, not many people were informed of the seriousness of climate change and the fossil fuel industry's role in it.

The fossil fuel companies have also impacted the decision-makers in the U.S., through their political activities such as excessive lobbying, political donations, and other activities; these relate to the lack of regulation and subsidies they gained to continue their business-as-usual. According to Kenner and Heede (2021), the U.S. lobbying expenditures of the four big fossil fuel companies including Chevron, ExxonMobil, BP, and Royal Dutch Shell from 1998 to 2019 were $731 million in total, and the political donations of the four companies from 1990 to 2018 were $59 million in total. Also, a study by Brulle (2018) showed that the lobbying expenditures of sectors engaged in fossil fuel supply and usage were ten times greater than the ones of environmental organizations and renewable energy sectors. Furthermore, in an analysis by InfluenceMap (2019), the oil and gas companies were the leading ones among 50 corporates with the most influence on carbon policy, and these included ExxonMobil, Chevron and BP; it was also found that corporate lobbying in coal value-chain sectors was very influential. These political impacts of fossil fuel companies help explain why they have not been regulated enough, as well as the subsidies they get from the government. For example, fossil fuel companies were subsidized by $5.2 trillion in 2017, and this was 6.4 percent of global gross domestic product in the same year (Irfan, 2019). Despite its huge moral implication, all of the fossil fuel companies' excessive climate denial and

political actions were carried out because all of them had the same goal: to increase profit.

Even though they knew the danger of their products, the decision-makers of the fossil fuel companies had a huge financial incentive to continue the companies' practices, and this appears to be the core motivation for their climate denial and political activities. According to a study by Gonenc and Scholtens (2017), the relationship between environmental and financial performance for fossil fuel companies was found to be negative, meaning that emitting more greenhouse gases has financially benefited the fossil fuel companies. Also, according to Kenner & Heede (2021), the executives and boards of the four big companies, BP, Chevron, ExxonMobil, and Royal Dutch Shell have been compensated based on the companies' fossil fuel production; for instance, since the 1990s, the forms of their compensation have increasingly been non-salary, such as stocks, bonuses or performance shares. This data suggests that the companies' decision-makers are incentivized to produce fossil fuels as much as they can because their wealth is directly related to the companies' production. In summary, the fossil fuel industry in general has been very profitable for the past few decades. From 1990 to 2019, the four firms of Exxon, Shell, Chevron, and BP have generated $1.99 trillion of profits from their fossil-fuel production (Kenner & Heede, 2021). Such studies show that the reason why the fossil fuel industry has been so dedicated to continue their emission-rich practices was that their only goal was to increase profits and that they have been achieving this goal.

This issue of the concentrated contribution of the fossil fuel industry to climate change is a form of incivility. First of all, civility is respecting others. The fossil fuel companies have manipulated the public by misleading them with climate science, instead of respecting the public by telling the truth. Furthermore, a key tenet of civility is caring for others. The companies, the trade associations and lobbying groups, and the government all pursued their own financial-interests and did not care about the impact their decisions have

on the environment and other people. Even though most of these companies knew that climate change was a crisis for humanity and that their decisions would negatively impact the issue, nonetheless, they made decisions that put their profits ahead of caring for the planet and people.

Climate change, in general, is also exacerbated by incivility. As stated, the most privileged and wealthy people contribute the most to climate change while the most vulnerable people are mostly impacted. Thus, incivility is why so many of the contributors, including the fossil fuel companies, governments, and even the public, have not been changing their practices fast enough to prevent a global climate crisis. If everyone decided to be civil instead, the time of zero emissions, no global warming, no climate change, and less human suffering would have come to humanity much faster.

Even though until now incivility prevailed and contributed hugely to the earth's most dangerous condition of climate change, right now, we can choose to be civil and help prevent the global catastrophe. By being civil, we care for the mother earth and our people on earth. By being civil, we consider others' safety and well-being when making decisions. Thus, by being civil, we do not emit greenhouse gases. Civility is exactly what the U.S. fossil fuel industry should choose to practice, and there are ways they can be civil without losing their profits.

It is no longer an option for the fossil fuel companies to practice their business-as usual; the government and investors in the U.S. are demanding that companies eliminate greenhouse gas emissions as soon as possible. For example, the current administration plans to initiate a policy called the Clean Electricity Standard, which targets 80% of our electricity to come from clean energy by 2030 and 100% by 2035 (Lederman, 2021). This plan means that the government will force emission-rich fossil fuel productions to be phased out in the following decade. Shareholder activists are also exerting their power to decrease emissions

from companies. This May, ExxonMobil's shareholders voted to replace two of the companies' board of directors with those who were showing a strong commitment to address climate change (Worland, 2021). In addition, this year, global investors holding a third of the world's assets of $41 trillion signed a letter that demands the world's governments to set targets for eliminating carbon emissions by 2050; among the signers, there were several investment entities from the U.S., such as Fidelity International and Pimco (Jolly, 2021). The strong shift in the government and investors towards the goal of reaching zero emission in the near future suggests that in order for the U.S. fossil fuel companies to keep their businesses, it is best for them to join the side of fighting against climate change.

The most preferable option for the companies is to transition to a renewable energy entity, and this transition means less fossil fuel production and more renewable energy production. There is one example of a company that successfully made such a transition in Denmark. Ørsted, which used to be a big fossil fuel company named Dong, decided to diversify their practices in 2009 (Kusmer, 2020). In the last 10 years, they have made a successful change in becoming a wind energy producer; in 2009, the company's percentage of renewable energy production was 15%, and in 2019, the number was 85% (Kusmer, 2020). This change was possible because of the Danish government's support for wind energy, which included subsidies, pollution taxes, and energy labels (Kusmer, 2020). The change in this big company made a huge positive impact in reducing Denmark's greenhouse gas emissions. For example, carbon emissions in Denmark decreased by half in the first five years of Ørsted's transition (Kusmer, 2020). Furthermore, that change turned out to be very profitable for the company. Now, Ørsted is the biggest wind producer in the world, accounting for a third of global offshore wind energy production; they made revenue of $10 billion in 2019 (Kusmer, 2020). This example shows how with the support from the government, which is indeed happening in the U.S., a fossil fuel company can shift to a

business model that can save the world and still experience a huge financial success.

We are now living in an unprecedentedly significant time where what we choose to do now impacts our and our children's well-being in this world. Climate change is an issue that affects every part of humanity: our environment, our health, and morality, and the condition will only get worse if our current practices continue. It is so concerning that only a single part of the earth, the fossil fuel industry, is accountable for an enormous amount of greenhouse gas emissions, and it is even more concerning that the U.S. industry, which plays a huge role, has been intentionally carrying out activities such as climate denial and lobbying in order to keep their dangerous emissions and profit from them. However, more people are realizing the impact of climate change, and as a result, there has been an enormous interest in the government and shareholders to reduce emissions. What this shift means for the U.S.-tied fossil fuel companies is that it is only a matter of time until they are forced to let go of every part of their business: burning fossil fuels. Now, the companies need to choose. Will they keep their business-as usual to operate for a short-time and contribute to a climate crisis that will eventually harm themselves and their children, or will they change their business model to a long-term successful one and contribute to a world that is much safer and happier?

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