

<b>Forum:</b>	General Assembly II
<b>Issue:</b>	Addressing fossil fuel consumption and green/renewable energies
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## Introduction

The 21<sup>st</sup> century has propelled nations towards unprecedented challenges. Environmentalism rose as a response to a deterioration of the natural world; the 1960s observed a grassroots movement against climate change, the 1970s kicked off with the establishment of the first “Earth Day,” and the 1980s saw the rapid cooperation of international member states to resolve the Ozone layer crisis. After an initial uproar in grassroots environmental advocacy, the international community and national governments began to take action. Specifically, they targeted a major issue of addressing the adverse consequences of fossil fuel consumption. However, a statistical study in 2022 showed that fossil fuel still “fuels” the global economy, making up 80% of total energy supplies (Ritchie & Roser, 2020). Many critics have pointed towards the failure of key legislatures and international agreements such as the Paris Accord. The turbulent support of the U.S. and its recent failures to abide by established deadlines significantly question the effectiveness of the Paris Accord. The 2005 Kyoto protocol, which came earlier, also promised to reduce greenhouse emissions through cutting fossil fuel consumption. Again, it did not receive the support of key developing economies such as India and China, hindering the agreement as a whole. Experts recognize that the topic of reducing fossil fuel consumption hinges primarily on a consideration of economic implications (Irfan, 2020). While developed economies may be able to successfully transform their energy sectors and pour investments into R&D, developing economies may not have the same ability due to restrained funds and the need to propel quicker GDP growth rates. Leaders of developing economies often accuse the West and the international community of “kicking away the ladder” towards economic growth (Strachman, 2002). As evidenced by these nuances, fossil fuel reduction and investment into renewable energies require careful consideration and innovative approaches to reignite stagnating efforts.

## Definition of Key Terms

### Fossil Fuels

A natural fuel such as coal or gas, formed in the geological past from the remains of living organisms.

### Carbon Emissions

Carbon Emissions refer to the release of CO<sub>2</sub> into the atmosphere primarily from burning oil, coal, natural gas and waste materials for energy use.

### **Renewable energy**

Energy from a source that is not depleted when used, such as wind or solar power.

### **Greenhouse gases**

A gas that contributes to the greenhouse effect by absorbing infrared radiation. Carbon dioxide and chlorofluorocarbons are examples of greenhouse gases.

### **Carbon footprint**

A measure of the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community.

### **Abatement Costs**

The cost of an intervention that will reduce greenhouse gas emissions by one tonne

### **MEDCs/LEDCs**

More economically developed countries/Less economically developed countries

### **Government Subsidies**

Monetary benefits given to producers or consumers of a good/service to encourage higher use (Pearsall et al., 2010).

## **History & Developments**

### **Commercial exploitation of petroleum (19<sup>th</sup> century)**

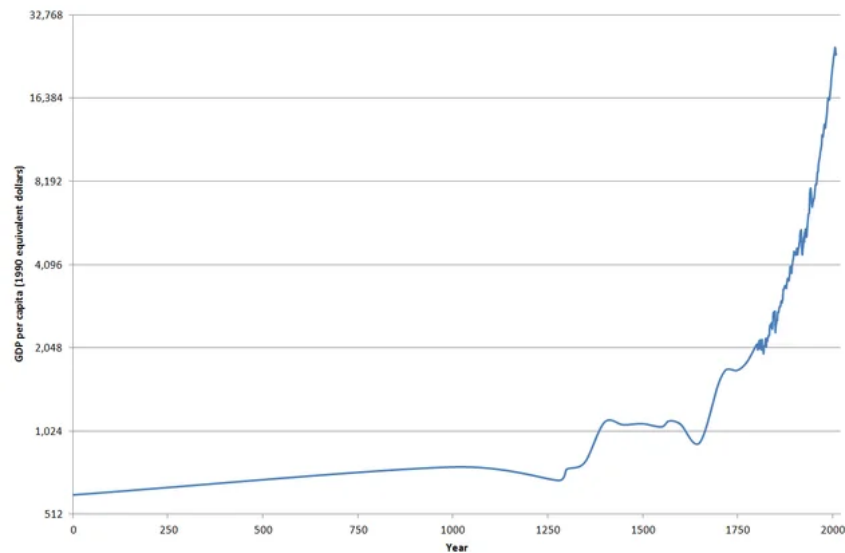
#### *Fueling the industrial revolution*

From ancient times, fossil fuels were used by different cultures and groups to smelt ores, keep warm, etc... However, moderate consumption of fossil fuels did not pose a significant threat to the environment. When commercial extraction began in the 19<sup>th</sup> century as European nations kickstarted their process of industrialization, the issue would expand in gravity. During the 18<sup>th</sup> century, factories and textile production units were mainly powered by windmills that utilized surrounding streams to generate energy (Onion, 2023). They allowed for basic tasks such as sawing wood and milling flour to be automated. These early-renewable energy sources, however, constrained economic development in many ways. It required factories to be placed near water sources, where space was limited. The generation of energy also could not support the needs of innovations that were built to execute complicated tasks such as automobiles. Therefore, this form of energy slowly faded away: replaced by coal

and, subsequently, petroleum. With James Watt's steam-powered trains and a cascade of innovations that followed, the tide began to turn towards an abandoning of traditional materials such as wood and hydropower for energy generation. The first modern commercial oil well was drilled by Edwin L. Drake in Titusville, Pennsylvania, in 1859. While well-owners observed fossil fuels starting from the 17<sup>th</sup> and 18<sup>th</sup> century, they were uncertain on how to extract the valuable resource (Duce, 1962). The Pennsylvania Rock Oil company circumvented the difficulty of extracting fossil fuels by collecting and accumulating fossil fuels that leaked to the surface. Edwin Drake believed that there had to be a more commercially viable and effective way to extract the resource; collaborating with the Rock Oil company, they were the first to experiment with modern-day drilling techniques.

### *The adverse effects*

While massively boosting per capita income in Europe during the 19<sup>th</sup> century (Britain became 6-times wealthier on average from 1750-1900), adverse effects were clearly felt (Broadberry, 2021). Without proper understanding of the



health-related ramifications of coal, factory and automobile emissions were largely unregulated. Therefore, in areas where coal was extracted or used for manufacturing, higher early-death rates occurred. Smog and soot regularly covered the atmosphere, and dangerous chemical compounds such as SO<sub>2</sub>(Sulphur dioxide) and CO (carbon monoxide) were often emitted. Combined with poor housing, hygiene issues, and intense working conditions, problems with living conditions started to pile up in industrialized nations and aggravated the effects of high pollution (Laskin, 2006). With constant, unregulated fossil fuel emissions, illnesses naturally followed. The health care system was not equipped to deal with pollution-related diseases. People commonly died from respiratory infections (bronchitis, pneumonia) and lung disease (asthma, emphysema) without effective treatments or early interventions.

### *The turning point (20<sup>th</sup> century)*

#### *Early to mid-20th century*

The expansion of fossil fuel use continued well into the mid 1900s without much consideration of environmental consequences or negative externalities. WW1 facilitated further fossil-fuel discoveries, and WW2 continued the trend of military actions intensifying the production of fossil-fuel related products (planes, tanks, etc...). However, a positive development took the form of natural gas. Natural gas emits only 50% of the carbon footprints as compared to coal and petroleum (*Natural Gas Vs Coal – Environmental Impacts*, n.d.). In 1947, the U.S. discovered large natural gas fields, followed by Austria, France, and Italy. In 1959, the massive Groningen fields in Netherlands were also uncovered, leading to export markets that triggered a global shift towards natural gas. During the 1970s, the concept of developing renewable energies became prevalent as the OPEC-backed shortage on oil devastated the U.S. economy (Akins, 1973). Yet, global acknowledgement of the problem of fossil fuels' adverse effects were still scarce.

### *An eventual global response*

The first major environmental crisis came during the 1980s, with the Ozone layer's gradual disappearance. The crisis started at the Antarctic region where researchers spotted an abnormally thin Ozone layer, the part of the Earth's atmosphere that helps filter harmful rays from the Sun. The crisis immediately raised alarm, drawing global collaboration to ratify the 1987 Montreal Protocol (which received the universal signature of all states) (*U.S. Department of State*, 2023). While not explicitly linked to climate change, the Ozone layer crisis sparked a global movement: one that involved governments, international bodies, and grassroots civilian activism (Benedick, 1996). The legislatures of the Kyoto Protocol, the Paris Accord, and the establishment of bodies such as the COP almost immediately followed. Elaboration on these attempted solutions is below.

## Major Parties Involved

### Developing/undeveloped Countries

It is crucial to comprehend the reasons behind the reluctance of developing nations to abandon fossil fuels and commit to developing greener renewables. The core perspective presented asserts that the people who have not contributed to climate change are having to experience the worst effects of climate change. With poorly designed air conditioning and other infrastructures, Africa and other post-colonial areas are struggling against global warming and other phenomena (Irfan, 2022). Developed countries so far have been able to handle the changes in climate conditions decently. Sentiments of injustice towards the request of reducing fossil fuel consumption is rooted within this perspective. In Africa and other post-colonial states, fracking and drilling companies were set up by western firms in the 19<sup>th</sup> and 20<sup>th</sup> century with the objective of profiting from rich deposits of oil and other natural resources (De Graffe, 2012). Is it fair to demand the abolishment of the rare gains from colonial subjugation? Should Africa and other post-colonial states be given a chance to develop into a modern economy before investing into renewables? These questions are often posed by leaders of developing nations.

### Developed countries

For developed countries, the establishment of long run projects for renewable energies may be feasible. Biden’s Inflation Reduction Act of 2022 aims to achieve a 40% reduction in carbon emissions by 2030, prioritizing the development of clean energy. When discussing this bill, the concept of a worthwhile “long-term” investment is often referenced (Blistine et al., 2023). With stable economic policies, taxation structures, and other fiscal tools in place, developed economies have the luxury of considering a long-term outlook on reducing fossil fuel. However, controversial topics on fossil fuel reduction remain within the political divides of developed economies. For example, most U.S. republican party members disagree with providing financial assistance to developing economies in transitioning to green energies. Some additionally argue that NDCs (nationally determined contributions) on reducing fossil fuel consumption is unfair, as developed countries are pressured to set their targets to a more ambitious figure (Dunlap & McCright, 2008)

### Fossil fuel corporations

Any company involved in the distribution or extraction of fossil fuels is likely to oppose a sudden shift to renewable energies. Lobbying efforts have often weakened international commitments of member states in reaching renewable-energy targets. For example, ExxonMobil's climate change denial campaign involved PR schemes and fraudulent use of experts to attempt to convince the public that climate change was made-up. Trump administration’s rollback of *Corporate Average Fuel Economy (CAFE)* standards was caused by lobbying from the Alliance of Automobile Manufacturers (Delmas & Narin, 2016).

### Civilian movements and organizations

WWF, Greenpeace, Transport & Environment, CAN Europe, EEB, E3G, Global Citizen, and Carbon Market Watch are major NGOs involved in reducing fossil fuel consumption and encouraging development in renewables. Less mainstream and controversial movements such as “Just Stop Oil” have also brought attention to the issue (Kinyon et al., 2023).

## Timeline of Events

The listed events below start from the 1970s, when climate activism and fossil fuel reduction began to be discussed. To read on earlier history regarding fossil fuel consumption, check the History and Developments section above.

Date	Event Name	Description
June 5 <sup>th</sup> , 1972	Stockholm Conference	<b>It was the first major international conference discussing the issue of climate change at a global level. Fossil fuel dependency was only indirectly discussed in reference to pollution concerns.</b>
1973-1974	OPEC Oil Crisis	<b>Provoked by US provision of weapons to Israel, Arab nations of the OPEC oligopoly implement</b>

		<b>an embargo on oil. This creates stagflation in the U.S., and sparks interest in renewable resources</b>
<b>October 20<sup>th</sup>, 1987</b>	<b>The Brundtland Report</b>	<b>Published by the UN, it acknowledges the potential viability of sustainable development through investment in renewable resources.</b>
<b>1988</b>	<b>IPCC established</b>	<b>The Intergovernmental Panel on Climate Change (IPCC) is established by the UNEP.</b>
<b>June 3<sup>rd</sup>, 1992</b>	<b>Rio de Janeiro Earth Summit</b>	<b>The UNFCCC is established during the summit, creating a foundation for fossil fuel reduction and investment into cleaner energy sources.</b>
<b>December 11<sup>th</sup>, 1997</b>	<b>Kyoto Protocol</b>	<b>Details below</b>
<b>December 7<sup>th</sup>, 2009</b>	<b>Copenhagen Accord</b>	<b>Non-binding commitments to invest in renewables are agreed upon</b>
<b>December 12<sup>th</sup>, 2015</b>	<b>Paris Agreement proposed</b>	<b>Details below</b>

## Previous Attempts to Solve the Issue

The Kyoto Protocol was the first international treaty specifically targeting fossil fuel consumption. In 1992, the UNFCCC (UN Framework Convention on Climate Change) asked states to acknowledge the harmful effects of carbon emissions and “commit” to reducing atmospheric greenhouse gases. However, concrete plans were not proposed. The Kyoto protocol extended the 1992 convention with details and timelines on reducing emissions. It employed the principle of “Common but differentiated responsibilities.” With the pullout of major emitters such as the United States and the refusal of China and India in ratifying the treaty led to its eventual dissolution in 2015. A coincidental reduction in emissions did occur during the span of the Kyoto protocol, due to the 2008 financial crash and the adjustments made to the economy by post-soviet nations.

In 2015, during a COP21 conference, the Paris Agreement was signed by 196 countries. It shared commonalities with the Kyoto protocol in its objective and the framework of “common but differentiated responsibilities.” The agreement was adopted in 2015 and aimed to limit global warming to well below 2°C, with efforts to limit temperatures to 1.5°C above pre-industrial levels. The implementation, on the other hand, differed in significant ways. It employs a system of NDCs (Nationally Determined Contributions). Countries submit a report, detailing a 5-year plan for emission reduction that they autonomously set. The plan is then revisited and previously declared target figures have to be met by the member state. This system allows for flexibility towards the needs of developing countries, while imposing a legally binding agreement for a certain level of fossil fuel reduction. Unfortunately, countries did not set ambitious targets. Even with progressive increases in target figures, the

ultimate goal of global warming below 2 degrees would not be met. Other UN efforts such as the establishment of UNEP initiatives and Fossil Fuel Subsidy Reforms (FFSR) have also contributed.

## Possible Solutions

A possible approach towards a reduction in fossil fuel consumption and an increase in investment into renewables lies in harnessing the positive aspects of current climate treaties. While the Paris Agreement and Kyoto Protocol both fell short in meeting expectations, novel ideas of NDCs and “common but differentiated responsibilities” resolved equity concerns in contributing towards global reduction in fossil fuel use. In addition, the Paris Agreement also relied heavily on market-related controls on fossil fuel consumption rather than the command-and-control model often followed by preceding treaties (i.e. carbon-taxes, permits, etc...). Economists agree that these policies are better-accommodated for the task and often avoid excessive economic inefficiency. Delegates can draw on these positive aspects of existing treaties and amendments to create a new framework on fossil fuel reduction.

Another method that would assist in mitigating the issue of developing countries’ inability to heavily contribute towards investing in renewable energies would be to facilitate transfers of technological innovation. A substantial portion of developing/undeveloped countries’ difficulties in transitioning towards renewables stems from the need for R&D. If developed economies assist in the R&D process and share the results, developing/undeveloped economies can effectively bypass the costly step. However, challenges of diverse patent laws and IP rights would need to be addressed.

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