

The Threat of Global Warming
and the ways to counter it.

Outline:

1. Introduction

1.1. Attention Grabber

1.2. Definition and explanation of
global warming

1.3. Brief overview of the history
and progressive of global warming

1.4. Importance of addressing this
issue for the survival of ecosystems
and humanity.

Thesis Statement:

"Global warming is a serious threat to the planet, causing higher temperatures, extreme weather and harm to the environment.

However, by using renewable energy, improving policies and taking personal actions, we can reduce its effects and work towards a safer future."

2. Understanding Global Warming

2.1 Greenhouse gases (GHGs) and their role in trapping heat.

2.2 Industrial activities and carbon emissions.

2.3 The rise in global temperatures over the past century.

Reference: Intergovernmental Panel on Climate Change (IPCC) Report, 2023.

3. Causes of Global Warming

3.1 Burning of Fossil Fuels

3.2 Impact on biodiversity and ecosystems

3.3 Land-use changes contributing to environmental degradation.

3.4 Release of harmful gases and chemicals into the atmosphere.

4. Effects of Global Warming

4.1 Melting polar ice caps and glaciers

Reference: National Oceanic and Atmospheric Administration (NOAA) Sea-Level Rise Report 2023.

4.2 Increased frequency of hurricanes, droughts and heatwaves.

4.3 Extinction of species due to habitat destruction

5. The Global Response to Global Warming

5.1 The Paris Agreement (2015)

5.1.1 International commitment to limit global temperature rise to 1.5°C

5.1.2 Role of developed and developing nations in emission reductions

Reference: United Nations Framework Convention on Climate Change (UNFCCC)

5.2 Sustainable Development Goals (SDGs)

5.2.1 Goal 13: Climate Action

5.2.2 Importance of global collaboration in mitigation climate change

6. Ways to Counter Global Warming

6.1 Transition to Renewable Energy

6.1.1 Expansion of renewable energy technologies and infrastructure.

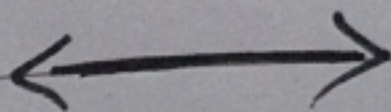
Reference: International Renewable Energy Agency (IRENA) 2023 Report.

6.2 Reforestation and Afforestation

6.3 Promoting Energy Efficiency

6.4 Waste Reduction and Recycling

7. Conclusion



Global warming is not a prediction. It is happening. - James Hansen

- Global warming has become one of the most urgent threats facing the world today. Picture a planet that floods, droughts and heatwaves have become common - this is the future global warming has created if left unchecked. Global warming refers to the gradual rise in the Earth's temperature, mostly caused by human activities such as burning fossil fuels, deforestation and industrial pollution. These actions have produced greenhouse gases like carbon dioxide which trap heat in the atmosphere and lead to the warming of the planet. The problem of global warming has existed since the Industrial Revolution, factories and machines first began to rely heavily on coal and oil for energy. With the passage of time, the planet's temperature has continued to rise, causing ice caps to melt, sea levels to rise and weather patterns to shift.

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By Addressing global warming is now critical for the survival of ecosystems and human life. Without action, the effect of global warming have intensified, leading to more extreme natural disasters and threatening food supplies, wildlife and human populations. It has become clear that effort to reduce emissions and protect the environment must be taken seriously to ensure a livable planet for future generations.

Greenhouse gases (GHGs) like carbon dioxide, methane and nitrous oxide trap heat in the Earth's atmosphere leading to global warming. These gases allow sunlight to pass through but prevent from escaping, creating a warming effect known as greenhouse effect. As the concentration of these gases increase, the planet warms faster, disrupting natural climate patterns and causing environmental damage.

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Furthermore, industrial activities, especially since the Industrial Revolution have contributed significantly to the rise in GHG emissions. Factories like transportation and power generation rely heavily on fossil fuels like coal, oil and natural gas releasing amounts of carbon dioxide into the atmosphere. According to the 2023 IPCC Report, carbon emissions from industrial activities are the leading cause of global temperature increase, making industries a major driver of climate change.

Therefore, global temperatures have increased by approximately 1.1°C . The rise is closely tied to human activities such as deforestation and fossil fuels consumption. As reported by the IPCC, the acceleration of global warming has resulted in more extreme weather events, melting glaciers and rising sea levels.

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The burning of fossil fuels like coal, oil and natural gas for energy is the primary driver of global warming. Power plants, vehicles and industrial processes emit massive amounts of carbon dioxide and methane are the leading greenhouse gases. According to the IPCC, fossil fuel combustion accounts for the 75% of global carbon emissions. This continuous release of gases contributes directly to the increase in global temperatures, driving extreme weather events and disrupting climate stability.

Moreover, Global warming has a profound impact on biodiversity and ecosystems. Rising temperatures alter habitats, forcing species to migrate or face extinction. For instance, coral reefs support about 25% of marine life and are highly sensitive to temperature changes.

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The IPCC estimates that **70-90%** of coral reefs could disappear by 2050 due to warming oceans and acidification, leading to a loss of marine biodiversity and threatening food sources for millions of people.

Similarly, Land-use changes, such as deforestation and urbanization, significantly contribute to global warming by reducing the Earth's ability to absorb carbon dioxide. Forests act as carbon sinks and are cleared for agriculture and development, releasing stored carbon back into the atmosphere.

The Food and Agriculture Organization (FAO) reports that deforestation accounts for nearly **10%** of global greenhouse gas emissions, further degrading ecosystems and exacerbating climate change.

Furthermore, Industrial processes release harmful gases such as sulfur dioxide, nitrous oxide and fluorinated gases have a high global warming potential. These gases not only trap heat but also contribute to air pollution and acid rain, further damaging ecosystems. According to the U.S. Environmental Protection Agency (EPA), fluorinated gases can stay in the atmosphere for thousands of years, intensifying their long-term impact on the climate and human health.

Global warming is causing polar ice caps and glaciers to melt at an alarming rate. The National Oceanic and Atmospheric Administration (NOAA) Sea-Level Rise Report (2023) reveals that ice sheets in Greenland and Antarctica have been losing mass at an accelerated pace, contributing significantly to rising sea levels. The loss of polar ice not only threatens coastal cities but also disrupts

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The loss of polar ice not only threatens coastal cities but also disrupts ecosystems that rely on stable, icy environments for survival.

Therefore, the rise of/in global temperatures has led to more frequent and severe weather events, including hurricanes, droughts and heatwaves. Warmer oceans fuel stronger storms while increased evaporation from the land exacerbates drought conditions. According to the IPCC, extreme weather events have more than doubled in frequency, posing a serious risk to infrastructure, agriculture and human health.

As global warming continues, many species are facing extinction due to the destruction of their natural habitats. Rising temperatures are forcing animals to migrate to cooler areas, while some like polar bears and amphibians, are losing their homes entirely. According to the IPCC reports that **1 in 6 species** is at risk of extinction if global temperatures rise by **3°C** would lead to a catastrophic loss of biodiversity and ecosystem imbalance.

The Paris Agreement, established in 2015, represents an international commitment to combat global warming by limiting the increase in global temperatures to well below **2°C**, with an aim to limit the rise to **1.5°C**. This agreement unites countries worldwide in a collective effort to address climate change, acknowledging the urgent need for action to safeguard the planet for future generations.

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By setting a target of 1.5°C the Paris Agreement emphasizes the necessity of reducing greenhouse gas emissions to prevent the most severe impact of climate change. Countries are required to submit their national climate action plans, known as Nationally Determined Contributions (NDCs) and their strategies for reducing emissions and adapting to climate change. This collective commitment is crucial in steering global efforts towards a sustainable future.

According to the Paris Agreement, recognizes the different capacities and responsibilities of developed and developing nations in addressing climate change. Developed countries, being historically the largest emitters are expected to lead in reducing emissions and provide financial and technological support to developing nations.

Meanwhile, developing nations/countries are encouraged to pursue sustainable development while receiving assistance to achieve their climate goals. According to the **United Nations Framework Convention on Climate Change (UNFCCC)**, this cooperative approach is vital for achieving global climate targets.

The Sustainable Development Goals (SDGs), established by the **United Nations** in 2015 consist of 17 interconnected objectives aimed at fostering global prosperity while protecting the planet. Among these goals, Goal 13 focuses specifically on climate action, explore the urgent need to combat climate change and its impacts. This goal emphasizes the importance of integrating climate measures into national policies and strategies, ensuring that all countries work towards a sustainable future.

Similarly, Goal 13 calls for urgent action to address climate change by enhancing resilience and adaptive capacities to climate-related hazards and natural disasters in all countries. It encourages nations to improve education, awareness, human beings and institutional capacity on climate change mitigation, adaptation and impact reduction. Goal 13 aims to foster a holistic approach to climate action, ensuring that efforts are inclusive and equitable.

Moreover, Global Collaboration is essential for effectively mitigating climate change and achieving the SDGs. Climate change knows no borders; its impact affect countries and communities worldwide, necessitating a coordinated response. By sharing knowledge, resources, and technology, nations can learn from one another and implement effective climate strategies.

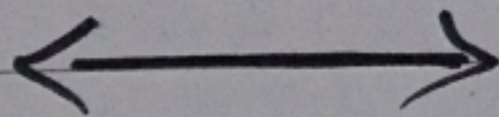
Transitioning to renewable energy is essential in the fight against global warming. Renewable energy sources like solar, wind and hydropower produce little to no greenhouse gas emissions, making them vital alternatives to fossil fuels. According to the International Renewable Energy Agency (IRENA) 2023 Reports emphasizes that expanding renewable energy technologies and infrastructure can significantly reduce carbon emissions while providing sustainable energy solutions.

Furthermore, Reforestation and afforestation are critical strategies for countering global warming. Planting trees helps absorb carbon dioxide from the atmosphere, acting as natural carbon sinks. The process not only reduce greenhouse gas levels but also restores ecosystems and biodiversity. According to the studies, one hectare of forest can sequester approximately 20 tons of carbon dioxide annually.

Similarly, Improving energy efficiency across industries, building and transportation is another effective way to mitigate global warming. By utilizing advanced technologies and adopting best practices, significant energy savings can be achieved. According to the **International Energy Agency (IEA)** estimates that improving energy efficiency could account for nearly **40%** of the emission reductions needed to meet climate targets by **2040**.

Therefore, Reducing waste and promoting recycling play vital roles in combating global warming. Landfills produce methane, a potent greenhouse gas, when organic waste decomposes. By minimizing waste through recycling and composting, communities can significantly lower methane emissions. Furthermore, recycling materials such as paper, plastic and metals reduces the need for raw material extraction.

To conclude, Global warming presents a critical threat to the planet with rising temperatures, melting ice caps and increasing natural disasters signaling the urgency of the situation. The causes, primarily the burning of fossil fuels and deforestation have led to severe environmental degradation impacting biodiversity and human life. However, the global response through initiatives like **Paris Agreement** and **Sustainable Development Goals (SDGs)**, especially Goal 13 on climate action. By taking collective action and committing to sustainable practices, humanity can counter the devastating impacts of global warming and secure a safer, more sustainable future for the planet.



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