



Encouragement Award

Science Writing Year 7-8

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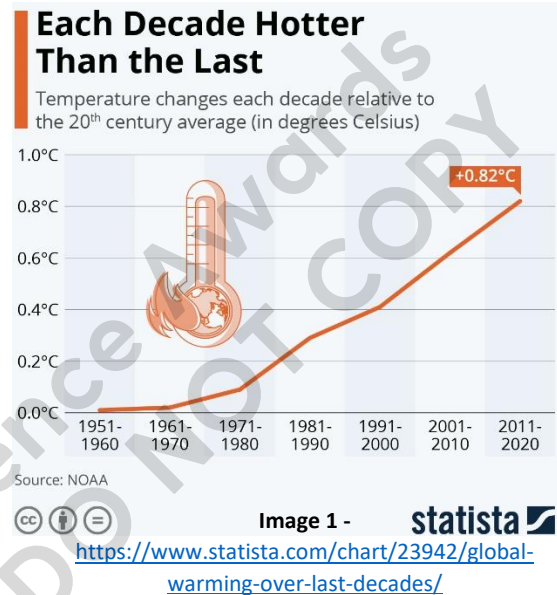


Global Warming is still so important - what is new in the field?

Word Count: 1,422

Introduction

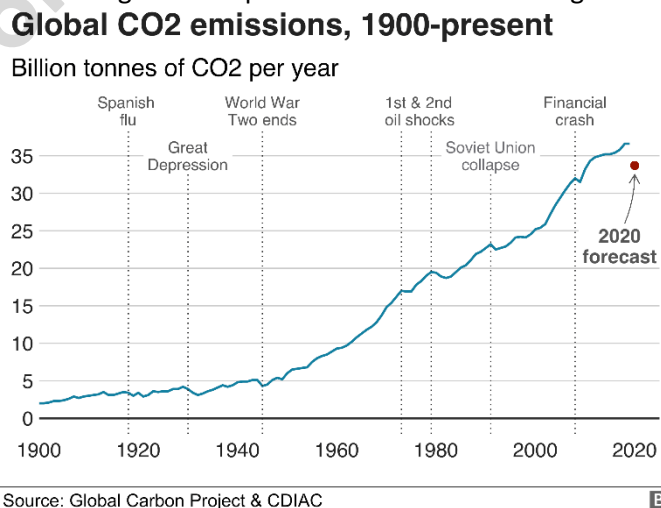
Global warming is a very well-known issue. However, it is often overlooked and forgotten about as we go about our daily lives. The heat of Earth has already risen by 1 degree Celsius compared to pre-industrial levels¹ (refer to Image 1). This may not seem like a lot but even the smallest changes can drastically change our climate. 2021 is the year to act on this huge problem. Once COVID-19 is behind us, we can focus more on global warming and how we can take action. COVID-19 has opened our eyes to the fact that we are not invulnerable and to keep ourselves safe we need to solve our problems. This text provides insights on current information on global warming and what we are doing about it.



What is global warming?

Global warming is often confused with climate change. However, global warming is actually a part of climate change, as global warming refers to the rise in global temperatures and climate change is the slowly increasing changes in the climate.

To further explain, global warming is caused by the sun's rays hitting and entering the Earth. However, greenhouse gases act like a blanket over the Earth only letting 30% of the energy escape^{2 3}. These gases are often produced through burning fossil fuels and wood products and include CO₂ (refer to Image 2) that is released during combustion of organic matter. In addition, there is Methane that is released from extracting it from coal, the decomposition of organic waste in landfill



¹ <https://www.wwf.org.au/what-we-do/climate/impacts-of-global-warming#gs.0x4qg6>

² <https://www.bbc.com/news/science-environment-55498657> Image 2 - <https://www.bbc.com/news/science-environment-55498657-decades/>

³ [https://www.conserve-energy-future.com/howglobalwarmingworks.php#:~:text=Global%20warming%20is%20caused%20by,in%20the%20atmosphere%20trap%20heat.&text=While%20some%20of%20the%20heat,\(N2O\)%2C%20water%20vapor](https://www.conserve-energy-future.com/howglobalwarmingworks.php#:~:text=Global%20warming%20is%20caused%20by,in%20the%20atmosphere%20trap%20heat.&text=While%20some%20of%20the%20heat,(N2O)%2C%20water%20vapor)

or bacteria from rice paddies and can absorb 20 times more heat than CO₂. There is also NO₂ which is released from industrial or agricultural activity and can absorb about 270 times more energy than CO₂⁴. A concerning discovery is that the Earth's CO₂ levels have been tested and reported as unsafe⁵.

The consequences of this catastrophic problem are hotter days and melting glaciers and ice caps which then increases the volume of water in oceans, threatening low-lying islands and coastal cities. In addition, there are more common and severe weather events and warmer and more acidic oceans caused by oceans absorbing most of our extra CO₂ threatening our coral reefs, marine life and food chains. Another consequence is the huge impact on animals. Currently 1 in 6 species is at risk of extinction due to increasing changes in their habitats and there is not much these animals can do⁶.

What are our world leaders doing to help?

In 2015 world leaders gathered in Paris for the COP (conference of the parties) to discuss our major global warming problem (refer to Image 3). At the COP, 196 Parties signed up to the Paris Agreement in the aim to try to limit the Earth's heat increase to 2 degrees Celsius, or even 1.5 degrees Celsius by the end of the century⁷. However, currently we are missing this target by a mile as we will exceed the 1.5 degrees Celsius limit within 12 years.



Image 3 - <https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know>

Another COP meeting was planned in Glasgow 5 years later, however, this meeting was bumped up to November 2021 as we were dealing with COVID-19 in 2020. These COP meetings will recur every 5 years to increase our carbon cutting aims and collect countries' progress.

In June 2019 the UK was the first major economy to make a legally binding net zero agreement. Later in March, the European Union followed the UK's action.

At the UN Assembly in September 2020, Xi Jinping, the Chinese President, stated that China was aiming to become carbon neutral by 2060. This is a big step as China is the largest contributor to carbon emissions standing with 28% and now promises to stick to this plan⁸.

With Joe Biden as the US' new President, they have now rejoined the carbon cutting movement.

The reason so many countries are joining this collaboration is due to the falling prices of renewables, meaning renewable energy is a smarter choice than fossil fuels economically. Soon, not only will governments make the change but households and investors as well as the more renewables are bought the cheaper they become making them an obvious choice to buy.

⁴ Ibid 3

⁵ n 3

⁶ n 1

⁷ <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

⁸ n 2

The European Union and US president have promised that trillions of dollars will be put towards green investments or more specifically decarbonisation. However, for countries not taking action, these two nations have decided to put a tax on imports for countries that are producing too much carbon. They hope countries like Australia, Brazil, Russia and Saudi Arabia who are not joining the movement, will begin to catch on.

Our progress is great, however, we still have a far way to go.

One problem is that many countries have expressed their interest in this movement but do not have the necessary plans to take action.

A focus of the COP Glasgow meeting will be to get nations to agree to start reducing emissions and have an end goal to completely abolish fossil fuels and bring in a net zero future by 2050⁹.

Company and Industry changes

Alongside the governmental movement for a net zero future, our companies and industries are starting to opt to cutting their emissions.

Nike have some recycled materials in $\frac{3}{4}$ of its products, as well as using 50% recycled materials in its Nike Air range. In addition it has some new leather-free, vegan sneakers (refer to Image 4) which reduce the amount of Methane released by cows¹⁰.

Lego released its first sustainable brick in 2018, made from sugarcane-based plastic. In addition, Lego are aiming to make all of its packaging renewable or recycled by 2030.



Image 4 - <https://www.lovemoney.com/gallerylist/87987/what-the-worlds-biggest-companies-are-doing-to-save-the-planet>

The fashion brand Kering is aiming to halve its emissions by 2025, making their textile plants more energy efficient and offsetting emissions.

Ikea has made it its goal to make more than 98% the wood they used in their products Forestry Stewardship Council-certified or recycled. They are also buying back used furniture from customers, these items are then either resold or recycled. They also opened their first 'energy positive store' in Adelaide which generates more renewable energy than it consumes.

Recently electric vehicles (EVs) have become more and more popular. Not only are they 'flashy cars' but they also save the environment. EVs can have major positive impacts on the environment as they can use less fossil fuels. However, EVs can still end up using fossil fuels as when being manufactured, maintained and charged unrenewable energy can still be used, still contributing to carbon increase.

⁹ n 2

¹⁰ <https://www.lovemoney.com/gallerylist/87987/what-the-worlds-biggest-companies-are-doing-to-save-the-planet>

Clean power Alternatives

More creative ways of using renewable energy are being invented. There are some recent and future inventions to help combat global warming. All of these inventions offer ways to avoid or reverse the effects of global warming.

In Seville, Spain they have a problem as they have too many oranges. These oranges eventually rot and release Methane into the atmosphere. So a company are using the rotting oranges by collecting Methane from them to produce 50kWh of electricity from 1,000kg of oranges¹¹.

Scientists have developed technologies to turn our plastic waste into clean, low-sulphur fuels. This can hopefully reduce the plastic in landfill and provide us with clean fuel.

Around 1/3 of all food produced is wasted every year, lots of it ending up in landfill. Scientists have found ways to turn food scraps into fuel through a two-step bio-oil process or using bacteria to create biogas¹².

Some scientists successfully trialed an ocean cooling spray on the Great Barrier Reef (refer to Image 5). It was done by spraying trillions of salt particles into the air over the reef which formed cloud droplets that reflect sunlight. This then prevented coral bleaching in these areas. The hope for this invention is to stop coral bleaching.

Electric buses are gaining popularity and in the next few decades they will seem normal. Electric buses reduce air pollution in cities and 26 cities in the world have promised to only by electric buses by 2025¹³.



Image 5 -

<https://www.lovemoney.com/gallerylist/97646/worldc>

Conclusion

Over the years we have tried to tackle global warming however, our attempts have proven to not be enough. Now is a better time than any to act. COVID-19 has opened our eyes and shown us that we need to tackle our problems. Our planet is on track to reaching the heat of 1.5 degrees Celsius in 12 years, greatly surpassing our limit. If we want to save our planet, then we need to act now.

¹¹ <https://www.lovemoney.com/gallerylist/97646/worldchanging-inventions-for-2021-and-beyond>

¹² Ibid 11

¹³ <https://www.wwf.org.au/news/blogs/5-ways-renewable-energy-is-set-to-change-your-future#gs.zlixso>

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