Environmental Impacts of Covid-19

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Collaboration with
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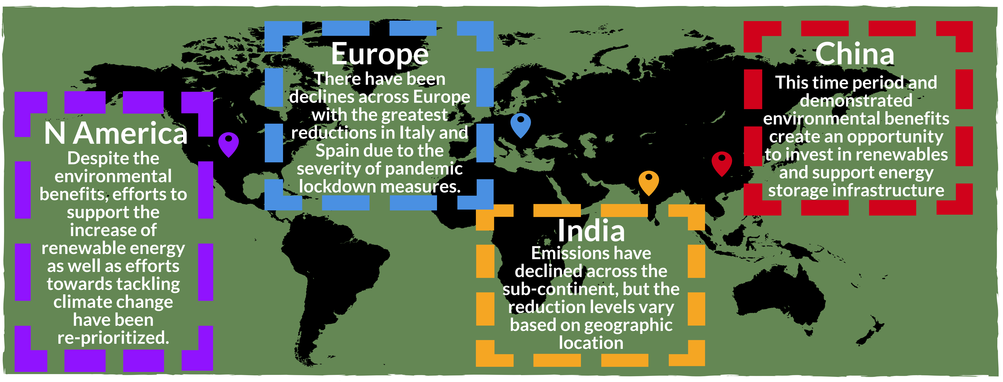

How have Covid-19 related policies and mitigation efforts had an impact on air quality, the environment, carbon emissions, and energy?

- Human mobility in China has declined by approximately 70% upon lockdown measures leading to carbon dioxide levels declining by 25%. The resulting improvements to air quality have caused an increase in O3.
- Carbon emission levels remained low for 4 weeks and returned back to normal within 7 weeks.

70%

CO_2 25%

- Concentrations of PM2.5, PM10, and nitrogen dioxide have declined between 30 and 40% across India, but there are different levels of emission reduction based on geographic location.
- Based on additional reductions of coal, oil, and gas, carbon emissions have declined by an estimated 30 MtCO2.
- Energy consumption in India has declined by approximately 28% due to lockdown measures but have also returned to normal in the subsequent weeks.

28%

- Electricity demand has declined by 14% across the continent.
- Across Europe, there has been a decline in nitrogen dioxide by 30-40% as well as other harmful air pollutants.

14%

- Within the United States, reduced human mobility as well as reduced energy usage has improved air quality and led to a 19% reduction in CO2 emissions.
- GHG emissions have declined by 13% across the country.

CO_2 19%

Covid-19 Impact

Drastic improvements in air quality sparked debate over whether Covid-19 would trigger an effective solution to the climate crisis.

Continued research led to a greater understanding of the interconnected dynamic of economic recovery with fossil fuels.

Due to the resulting shutdowns and now the prospect of getting the economy 'back to normal' researchers are trying to understand the best way to move forward ensuring pandemic response is adequate and supporting the population. Connecting the climate crisis with Covid-19 allows recovery to be enacted in a sustainable way, but ultimately governments hold a great amount of power.

Covid-19 is a particularly important opportunity for climate researchers as it provides insight on what policies are effective moving forward and how to best support the economy and population while ensuring the environment is being just as adequately protected.

Globally, human mobility has declined by 90% and pollution has declined by approximately 30%.

Countries with full lockdown measures have experienced an average 25% decline in energy demand with all types of energy declining except for renewables.

Global carbon emissions are expected to decline by 8% in total this year.

Main Findings

Improvements to air quality have been demonstrated in all regions included but level of improvement differs

Large reductions in carbon emissions have been experienced due to differential industry shutdown but the short-term reduction may not provide beneficial long-term results

Both energy supply and demand have been altered by changes in human activities

The Covid-19 pandemic presented a policy window for researchers to understand how lockdown/quarantine measures and the resulting industry shutdown impact climate change.

- This natural experiment provided insight on measures that can be used to reduce greenhouse gases and carbon emissions, as well as improvements to air quality.
- As the pandemic requires faster action, policy has neglected the climate crisis but despite the slower onset, this will be just as problematic for our global population.
- Public support for the climate crisis has declined as a result of the pandemic but it is important for governments to still take action regardless.
- Thorough economic analysis has demonstrated that there are stimulus options that will support economic improvement after the pandemic as well as lead to a low reliance on fossil fuels.

Globally, policies enacted during the pandemic largely focused on getting back to pre-pandemic levels, while

only 4%

have the potential to improve GHG levels
(Hepburn et al., 2020)

As governments plan economic stimulus packages and begin to lift restrictions within their countries, the incentives being created have the potential to lead to a future less reliant on fossil fuels BUT can also greatly increase that reliance.

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