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Innovations being used to reduce CO2 emissions

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Looking back at the history of mankind, tremendous improvement in the field of science, technology and medicine can be seen in just the last decade, compared to millions of years combined. While it is a remarkable feat that we have achieved to ensure our lives be worth living, there are also consequences to these rapid advancements. One such consequence, that has obtained the spotlight in the recent years, and has become an increasing threat to the very Earth we live in, is climate change and global warming. In a nutshell, global warming refers to the increase in our planet's temperature, higher than what it is supposed to be. While this phenomenon occurs on a worldwide scale, it is referred to as global warming. The increase in sea level due to the melting of icebergs, the recent bushfires, heat waves, and many other natural disasters are due to climate change attributed by our technology. And one important chemical that is the cause for the climate change is carbon dioxide emissions from various sources. So how and when does the gas release, what is its effect on our planet, and what can be done to reduce the emissions?

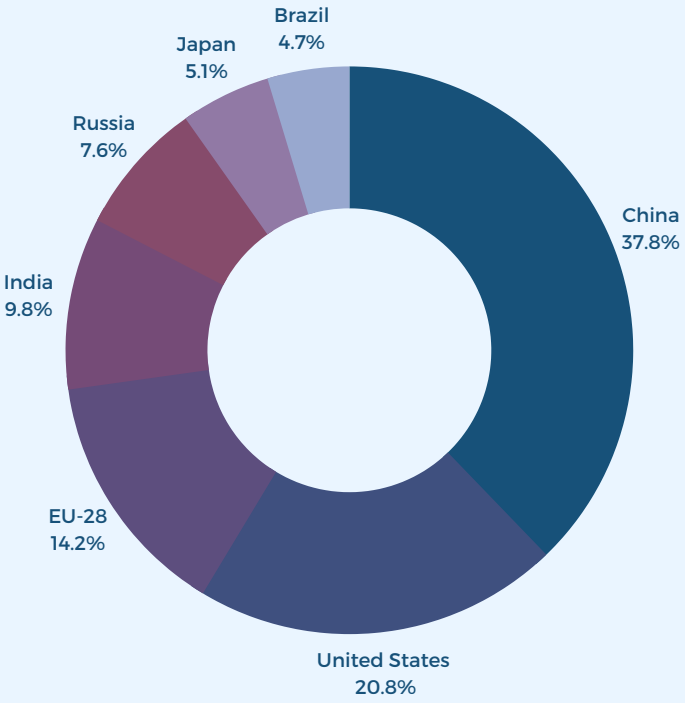
CO2: Individual, or global responsibility?

Now you may be wondering; we have identified the cause for climate change. But if only I as an individual put in an effort, how is it going to show results on such a huge planet? Even if I stop it, others are going to keep doing it. Why should I be the one who should start the change?

While, the climate change is the result of the cumulative human activities, such as vehicles, greenhouse gas producing equipment such as air conditioners, refrigerators, and chimneys from industries, it is the cumulative responsibility for everyone to contribute to reverse it, or at least keep it under control. But the change starts from us. We may not know it, but however small our contribution is relative to the world, overtime, the results will be huge, and in the present condition, our planet requires all help that it needs, small or big.

In South America, the situation is worse, as climate change has caused droughts, rise in sea level, and acidification of oceans leading to loss of sea life and upsetting the life cycle.

Although, looking at global data, South America contributes the lowest amount of CO2 emissions, compared to other continents. FAO data suggested that the highest amount of CO2 amounted to fossil fuel consumption and forestry, related to agriculture.

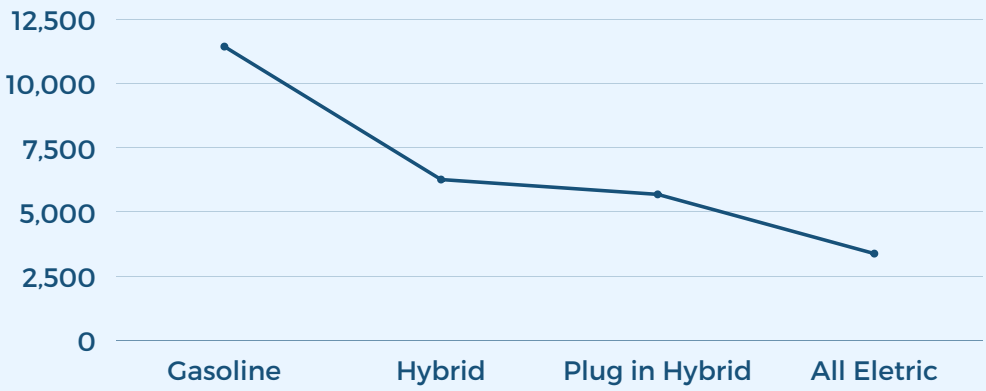


Percent of global emissions, 2017.

How to reduce the emissions? Innovations and potential ideas:

Now that we have looked at the top reasons for CO2 emissions, it will be clear where we want to focus our solutions and ideas at. But, how can you stop utilizing fossil fuels, as these are very essential for the functioning of our society? So let us then look at the not-so-important areas where we can use innovations to find alternatives.

The first thing that we can find alternatives, and an area in which greener alternatives have begun to take over, is vehicles and vehicular emission. We have recently seen the surge of electric vehicles, from Tesla, and many other two wheelers who have successfully implemented this idea. In fact, Norway has already decided that new vehicles will be all electric, whether it is hybrid plug in or hydrogen batteries, by 2025. While one may argue that electric vehicles are expensive, and may not be affordable for the majority, there are other alternatives. Using fuel vehicles only in cases of emergency or long distance, and resorting to public transport vehicles or bicycles, can reduce the carbon footprint significantly.



Annual CO2 emissions per vehicle in the US

What is the first thing that comes to your mind when you hear the word CO2? That's right! Trees. We all know that tress utilize carbon dioxide and increase oxygen in the atmosphere. Due to increase in the population, and rapid deforestation of rain forests, there is significant decrease in the number of trees, and this has resulted in increased prevalence of CO2 in the air. Everything starts small. Starting from gardens in every house, however small it can be, to initiatives by the Government for large scale reforestations can result in reducing the CO2 in the atmosphere. Brazil has the highest amount of deforestation, and according to FAO, it has lost almost 2.6 million hectares of forests per year. This is the result of urbanization, cattle ranching and agriculture. Through environmentalists, there is a trend of reforestation in many countries, and almost 4,50,000 trees have been planted in Brazil since 2009. But the loss still is higher than the cure, and strict laws must be enacted to further breaching of the remaining forests and preserving them. Amazon forest in Brazil is the largest rainforest, and while the deforestation rate was decreasing over time, in 2020, it reached the highest since 2008 at a total of 11,088 sq km.And the new laws further provide risks to the amazon forests, as it encourages further deforestation.

Greener alternatives:

Along with green vehicles, and reforestation, green fuel is also an innovation that can entirely replace the conventional fossil fuels. Fossil fuels are the biggest contributors to energy and industries, and as a result, cause high greenhouse gas emissions. Using alternate sources of energy, such as wind, solar, geothermal can steadily decrease the use of fossil fuels to a point we do not require them. Renewable sources of energy produce far less carbon footprint but have one disadvantage. They are not as efficient as non-renewable sources and are less powerful. But Brazil currently leads the renewable energy source in South America, and this can serve as an encouragement for other countries to follow. Further, enacting laws will pave way for innovations that can rival the energy output of fossil fuels.

Switching to greener alternatives has other advantages as well. If we look at a much smaller scale, inhaling the greenhouse gases is harmful, and has serious health issues. We must reduce the emission of these gases, one way or other, and wind or solar energy has less consequences compared to fossil fuels.

It is true that small drops make big oceans, and everything must start with us. If we make our contribution to the planet that supports our lives, then it will encourage everyone to do so, and together, we all will make this planet a safer place to live again!