Carbon offset, carbon credit, carbon offsetting, carbon emissions, sustainability, environment, energy.

Global initiatives to reach carbon neutrality

Our combined carbon footprint can soon become our combined destiny, a destiny that we owe to our progeny! Countries worldwide are aiming for “carbon neutrality” today, a term that’s more in buzz than ever before, due to a surge in abnormal temperature variations - 10 hottest years in the last 139 years have been post-2005 - as well as an increase in the number of cyclones, and other extreme weather phenomena worldwide. Global warming is real, and the consequent rise in sea level (due to global 1.2° rise in temperature) is now accepted even by those who initially called “global warming” an imagined scenario by the scientific community.

Background of global initiatives towards reducing carbon footprint:

So, a carbon footprint is the sum total of greenhouse gases or GHGs emissions caused by an individual, business, or country (essentially by human activity). The footprint is massive when it comes to emissions caused by burning fossil fuels by the energy sector. In fact, the energy sector, especially the coal industry, alone is responsible for more than 70% of the world's GHGs emissions. But phasing out coal dependency over the next few decades is easier said than done. In light of this, the system of‘ “carbon trading” was initiated and it has now become a foundational premise to balance out current carbon emission levels.

The 2005 Kyoto Protocol:

Kyoto protocol formally acknowledged the phenomena of global warming and delegated responsibility to the industrialized nations as well as the developing world to move towards gradual decarbonization of our planet. For this, it emphasized the concept of “carbon trading”, so that the global entities can actively participate in balancing out their emission levels, thereby, neutralizing their current carbon emissions to aim for a “carbon neutral” state.

The 2015 Paris Agreement:

The 2015 Paris Agreement signed by 186 countries stipulates that global temperature must stay well below 2°C at the turn of the century. The countries are to submit their NDC or Nationally Determined Contribution targets by this year.

However, in reality, the Climate Action Tracker, in 2020, found out that the targets already submitted by 11 countries regarding NDC to be ‘insufficient’ to limit the rise in stipulated times.

This is where the crucial role of carbon trading comes into play.

So, what is a carbon credit?

A “carbon credit” is defined as a *certificate showing that a government or company has paid to have a certain amount of carbon dioxide removed from the environment*”, according to the Collins English dictionary. One such credit is equivalent to one tonne of CO_2 or other equivalent greenhouse gases emitted.

Can carbon offsets balance out carbon emissions?

A “carbon offset” is a term that defines any act that compensates for the emission of greenhouse gases (GHGs), particularly the carbon emissions (measured in equivalents) by causing an equivalent reduction in emissions somewhere else. So, basically, any country, state, corporation, and even an individual can compensate for its/his carbon emission level and can aim to reach a “carbon neutral” state where the gross rate of reduction is equivalent to the rate of emissions. For instance, a participant can invest in projects related to using alternative sources of energy like windmills or solar plants, or help with tree plantation, marshland development, and other similar endeavours.

Interestingly, the concept of carbon offsets combines carbon emissions with economic responsibility, especially, to high GHGs emitting organizations at the regional level, and countries at the global level.

The process of carbon offsetting

Voluntary compliance to carbon offsets is a part of global efforts towards a cleaner future. So, there are specific companies that sell carbon credits to the interested participants. Currently, carbon credits can be purchased and sold either through a regulated system or a voluntary system.

Regulated: Under the norms laid down by the Kyoto Protocol, the emission quota trading product is called CER, and the system comes under the framework of The Clean Development Mechanism or the CDM. This mechanism allows for free trading of certified emission reduction units or CER for the interested players. The European equivalent to this unit is called EUA CER, and all 31 countries can participate in its trading. The regulated schemes provide for emission trading where the costs are less comparatively, leading to a more economically efficient scenario.

Voluntary: VER or the voluntary/verified emission reductions is a type of carbon offset that can be purchased by a company or even a private individual. These offsets are verified outside of the Kyoto Protocol.

The interested participants can even work it out through a mechanism called JI or Joint Implementation, where one can create emission reduction projects where emissions are lesser.

Can an entity actually reduce its carbon footprint?

Let’s see examples of global corporations and organizations who successfully reduced their carbon footprint voluntarily and aimed to reach a carbon-neutral state.

Search Engine giant Google’s success story:

Recently, Google has been in the news as it declared itself to be “carbon neutral”. Though the search engine giant is carbon neutral since 2007, this year, it has wiped out its entire carbon footprint that has accumulated since its inception by successfully investing in “high-quality carbon offsets”. Furthermore, the company has vowed to function all its offices via carbon-free energy by the end of the next decade.

Similarly, Microsoft plants to achieve the same by 2030, and so does Apple, and Amazon.

Auto industry’s innovative solutions to reduce their carbon footprint:

Every business enterprise knows that its primary investment is not in the present, but in the future. And carbon neutrality is an investment into the safer future of not only an individual organization but the whole planet. Here are few global automobile brands that have taken initiatives with utmost sincerity and have achieved great results:

Did you know that the auto manufacturing giant Honda is a top name in fuel efficiency? Its investment in hydrogen fuel-powered vehicles is a gigantic step towards a cleaner future for everyone.

In 2010, Ford promised to reduce its emissions to 30% of its then levels in 15 years, and achieved the feat in just 7.5 years!

Tesla’s investment in electric cars is a massive step towards an energy-efficient future where the dependency on carbon-emitting fuels can be hugely reduced. Similarly, Toyota is the first to push for hybrid cars and follows innovative solutions to reduce its own carbon footprint.

Fiat Chrysler Automobile’s story is also an exemplary one as it was able to cut its emissions by one-third.

The proactiveness of the automobile industry towards sustainability is a positive example for other industries.

United Nation’s ambitious aviation offsetting scheme - CORSIA:

In 2016, 192 countries agreed to the United Nations aviation agency ICAO’s (The International Civil Aviation Organization) ambitious scheme - Carbon Offsetting and Reduction Scheme for International Aviation or CORSIA. Just like the coal sector, the aviation sector majorly contributes to global carbon emissions. In fact, in 2018, the aviation sector was responsible for 2.4% of total CO_2 emissions. Keeping this in mind, it was agreed in 2016, to devise a strategy to make international flights post-2020 to be “carbon neutral”.

It was decided that airlines will invest in other sectors to compensate for their contribution to global emissions. Starting in 2021 as a voluntary initiative, any airline that flies within two states that volunteer to the scheme will need to fulfil its offset requirements. This makes CORSIA essentially a ‘route based’ mechanism. In 2032, a special review by the aviation regulatory body will decide how to go further with the scheme.

Carbon offsets for a carbon-neutral flight:

A carbon-neutral flight is an interesting idea which is catching the eyes of a lot of individuals. The 16-year-old activist Greta Thungerg made a strong point when she sailed across the Atlantic on a no-emission boat in 2019. In fact, there’s been more and more interest in this on social media, and important vendors like Cool Effect in the USA report a gradual rise in the purchase of aviation offsets by individuals. There is a lot of future potential in this scheme, going forward.

The future potential of carbon offsets:

Eric Carslon, the founder of CarbonFund.org says that “When we started it was entirely aimed at individuals, it is now probably about 70-75% business actions.” As of 2019, the global value of carbon offsets stands at $0.6 billion, but this value has multiplied in the past 3 years. And according to German bank Berenberg, the total value of carbon offsets could be anywhere near $200 billion by 2050.

The importance of this unique concept of carbon trading lies in the increase in awareness where businesses and individuals look at the carbon footprint of our race in a responsible light. The increased corporate responsibility is a great initiative, especially when its effects are considered cumulatively.

However, the purchase of carbon offsets, and achieving carbon neutrality can never be the only measure that can make our planet sustainable and arrest global warming. Compliance with energy regulatory standards, and emission levels decided by international agencies like the United Nations Framework Convention on Climate Change or UNFCCC, need to be followed in both letter and spirit. Similarly, depletion in natural resources means more investment in innovative solutions for cleaner energy. A lot more needs to be done when it comes to decreasing dependency on non-renewable sources of energy like coal, and shifting towards harnessing the potential of renewable sources of energy like solar energy, and wind energy.

Winds of change can be seen on the horizon. In the end, it all comes down to the tremendous potential of every human being to make our planet carbon neutral and safer for generations to come.