



Debunking the science behind “Net-Zero”

By Mala Balaji, Researcher - Environment and Climate Action

On World Earth Day, the 21st of April 2021, forty world leaders convened for a [virtual climate summit](#). It was hosted by the President of the United States Joe Biden to address the global climate crisis and set a stage for the participating countries to announce their climate ambition and the actions they intend to take to reduce their emissions in order to achieve carbon neutrality or net-zero. The United States has committed to reducing its greenhouse gas emissions by 50% to 52% below its 2005 emission levels by 2030. Europe on the other hand intends to be the first-ever climate neutral continent in the world by 2050. There was a lot of speculation as to what India's stance will be in its battle between economy and ecology. To put an end to it, India in a strategic move did not set a timeline on the reduction of emissions but rather set a progressive renewable energy target of [450 Gigawatts](#) by 2030.

Despite these ambitious targets set by various countries, we know that the climate crisis needs concrete climate action rather than mere pledges. The crisis is real, catastrophic and accelerating at a rapid pace. In an ideal world, the concept of “net-zero” seems like an impeccable plan which promises to be accountable for the absorption and removal of greenhouse gas emissions in order to tackle the climate crisis. However, the world as we know it is anything but ideal. It is only when we analyse the nitty-gritty details do we realise that the science behind net-zero is contentious.

NET-ZERO 101:

In simple terms [net-zero or carbon neutrality](#) refers to “the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. We reach net-zero when the amount we add is no more than the amount taken away”. According to [a report](#) by the Intergovernmental Panel on Climate Change, countries must bring carbon emissions to net-zero by 2050 to keep global warming within 1.5°C of pre-industrial level. Unfortunately, the means to achieve this are by relying on fallacious carbon offsets and unproven technologies. There are various flaws and shortcomings in this science.

FALLACY 1:

The basic definition of net-zero itself is questionable as there is not much consensus on which substances it applies to. [Different countries have different standards](#) of measuring their emissions and this creates ambiguity. Some countries like China are carbon specific when it comes to calculating their emissions whereas countries under the European Union calculate the greenhouse gas emissions as a whole. The way in which these gases affect the atmosphere is different and hence agreeing on a global standard definition is important for the sake of accountability.

FALLACY 2:

Most countries have pledged to achieve net-zero by 2050. By setting their targets to a future timeline; the focus shifts from the immediate crisis and the urgent need to reduce emission. This



acts as a smokescreen for the fossil fuel industry to hide behind and continue their business unhindered.

FALLACY 3:

Another deceptive strategy that most countries and corporations rely on to achieve their target is by purchasing carbon offsets. This is usually done by investing in massive nature-based projects that capture and store carbon, such as forest and ocean restoration. In reality, there isn't enough land and ocean available to offset the enormous amount of carbon emissions let out by the big polluters. Hence, the problem with investing in [carbon offsets](#) is that it is difficult to ascertain the genuineness of the project and whether the money invested is being used for the purpose intended.

FALLACY 4:

High-income countries tend to invest in carbon offset projects in low-income countries. However, these low-income countries have their [own climate targets](#) to achieve. Therefore passing the burden to them is unethical. There is also a problem of duplication as the reduction in emissions is accounted for twice, once by the country investing in offsets and then again by the country where the offset project is geographically situated.

FALLACY 5:

Investment in renewable energy is an important necessity to facilitate climate action. With time, it is seen that renewable energy is proving to be cheaper than fossil energy and hence the transition to renewable energy is bound to happen anyway. This in no way reduces the fossil fuel emissions but rather adds to the energy mix and hence should not be counted as a carbon offset.

CONCLUSION:

The future of our planet is at grave risk. Global temperatures are on the rise at an alarming pace and it will reach a point of no return if we continue business as usual. Mere pledges to attain carbon neutrality by countries are just empty words if not backed by action. Instead of relying on future net-zero targets, countries and corporations should concentrate on real and immediate reduction of greenhouse gas emissions. It also requires a serious increase in government action, accompanied by sector-specific regulations. There need to be separate targets for negative emissions and emissions reductions and the targets must specify which emission sources and which gases are covered. The right way going forward is to accompany net targets with ambitious near-term action, disclose measures to achieve them and closely monitor and manage the carbon sinks. Ultimately, there is a pressing need to phase out the use of fossil fuels and embrace clean energy. The governments need to invest and support the ecosystems that nurture the people and their livelihood.