

Unacceptable risks posed by “climate neutrality” replacing “GHG emission reductions” in the Paris Agreement?

The term ‘climate neutrality’ is currently resonating in the climate policy arena and is included in the collective mitigation goal (Article 3.1) of the draft Paris Agreement. A close look at this relatively new and scientifically ill defined term and its potential implications reveals a fundamental risk that this term will be used to undermine efforts to reduce CO₂ and other greenhouse gas emissions and be used to introduce dangerous geo-engineering approaches into the climate regime.

Unless ‘climate neutrality’ is strictly defined as ‘zero global anthropogenic greenhouse gas emissions’ in the Paris Agreement, which seems very unlikely at this stage of the negotiations, it is clear that it will lead to an undermining of efforts to reduce greenhouse gas emissions. Even if ‘climate neutrality’ were to be defined as ‘zero global greenhouse gas emissions,’ it is not sufficient to limit warming below 2°C or 1.5°C, unless there is a strict time frame for it to be achieved.

‘Climate neutrality’ opens the door to the following approaches:

- Offsetting CO₂ emission reductions via the scientifically dubious accounting of natural sinks, permitting – within their preferred accounting frameworks – ongoing increases in CO₂ and other long lived GHG emissions whilst appearing to reduce overall emissions.
- Accounting for non-greenhouse gas air pollutants in a way that offsets the needed reductions of CO₂ and other GHGs, and permitting ongoing increases in these GHGs, whilst appearing to reduce overall emissions.
- Enabling the introduction of geo-engineering techniques, specifically measures such as adding pollutants to the atmosphere that reduce solar radiation at the surface of the earth.

Consequently inclusion of the term ‘climate neutrality’ without a strict definition, such as ‘zero global anthropogenic greenhouse gas emissions’, would undermine GHG emission reductions thereby risking failure to achieve any long-term global temperature target. As the term ‘climate neutrality’ appears designed to limit the pressure to reduce CO₂ emissions, a likely consequence of its application within the Paris Agreement would be a failure to address ocean acidification.

What follows is a series of concerns regarding the scientific implications of the 'climate neutrality' concept. These are designed to provoke questions and debate on the risks associated with the introduction of the term 'climate neutrality' into the Paris Agreement effectively replacing global GHG emissions reduction goals.

Even if 'climate neutrality' were defined as 'zero global greenhouse gas' emissions, it is not sufficient to limit warming below 2°C or 1.5°C

Future emission reductions must compensate for the slow start of global mitigation efforts over the past few decades. To hold warming below 1.5°C by 2100, or below 2°C, most scenarios in the scientific literature need negative greenhouse gas emissions after reaching zero by 2060-2080 (2080-2100 for below 2°C). Hence, even zero global greenhouse gas emissions – the most rigorous possible definition of climate neutrality – is insufficient by itself to limit warming to below 1.5°C by 2100 (or below 2°C), if the correct time-frame is not specified. Hence any reference to 'climate neutrality' in the context of long term temperature goal would have to be linked to a time frame in order to be meaningful.

'Climate neutrality' undermines efforts to reduce CO₂ and other long-lived greenhouse gas emissions

There is no rigorous scientific definition of 'climate neutrality', unlike GHG emissions. In the policy world the 'climate neutrality' concept refers not just to greenhouse gases but to ALL anthropogenic emissions of air pollutants and aerosols. This means that reducing emissions of aerosols and other "short-lived climate forcers" or air pollutants could be counted towards achieving a state of "climate neutrality", even though the drivers of climate change, CO₂ and other long-lived greenhouse gas emissions, continue to increase.

We can only achieve the long-term temperature limits by reducing global greenhouse gas emissions to zero: not through reducing aerosols like black carbon

The IPCC notes: "in the context of long-term climate goals, reducing short-lived forcers now has only a very limited long-term effect." The IPCC AR5 is very clear that the only way to achieve a long-term global temperature goal is by zero global carbon emissions. Carbon emissions must reach zero by 2050 and even go negative after 2050 for 1.5°C. Global greenhouse gas emissions must be reduced to 70-95% below 2010 in 2050 for 1.5°C and must reach zero by 2060-2080. "Climate neutrality" is often put forward as way to count air pollution reductions.

Climate neutrality opens the door to geo-engineering, which is in direct conflict with the climate convention's objective of avoiding dangerous interference with the climate system

The concept of climate neutrality opens the door to accounting for effects on the climate other than those from greenhouse gases. Climate neutrality could thereby be achieved through "solar radiation management" techniques, also known as "geo-engineering", such as deliberately emitting particles to cool the climate.

The IPCC is clear that such techniques "entail numerous uncertainties, side effects, risks and shortcomings" and "raise questions about costs, risks, governance and ethical implications of development and deployment."

Geo-engineering is in direct conflict with the Convention's objective to prevent dangerous anthropogenic interference with the climate system, and is in stark contrast to the solid scientific basis of required anthropogenic greenhouse gas emissions reductions as provided by the IPCC.

Climate neutrality does not restrict accounting of natural sinks, which allows for increases in anthropogenic emissions

Over the last decade, natural carbon sinks (terrestrial and oceanic) have absorbed more than 50% of anthropogenic emissions and these sinks are already included in IPCC assessments of zero global anthropogenic greenhouse gas emission targets. Climate neutrality's unclear definition would allow governments to selectively include terrestrial and oceanic carbon sinks in their accounting, leading to double-counting of these sinks. A world with climate neutral countries would not entail zero global greenhouse gas emissions, and would ultimately undermine efforts to achieve any long-term global temperature goal.

Climate neutrality does not address ocean acidification

Accounting for aerosols, double-counting of sinks, geo-engineering etc. evade CO₂ emission reductions that IPCC confirms are critical. The result is that, besides further climate changes, continued increases in CO₂ atmospheric concentrations will lead to a rapid worsening of ocean acidification, with detrimental effects on marine life and coral reefs. In other words, a reference to 'climate neutrality' in place of one to deep GHG emission reduction goal for 2050 could, through the accounting of carbon sinks and/or air pollutants and aerosols, result in reality in no deep reduction in CO₂ emissions.