

Sustainability Glossary

Carbon dioxide removal (CDR)

Anthropogenic activities removing CO₂ from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products. It includes existing and potential anthropogenic enhancement of biological or geochemical sinks and direct air capture and storage but excludes natural CO₂ uptake not directly caused by human activities. See also Mitigation (of climate change), Greenhouse gas removal (GGR), Negative emissions, Direct air carbon dioxide capture and storage (DACCS) and Sink.

Climate neutrality

Concept of a state in which human activities result in no net effect on the climate system. Achieving such a state would require balancing of residual emissions with emission (carbon dioxide) removal as well as accounting for regional or local biogeophysical effects of human activities that, for example, affect surface albedo or local climate. See also Net zero CO₂ emissions.

Greenhouse gas removal (GGR)

Withdrawal of a GHG and/or a precursor from the atmosphere by a sink. See also Carbon dioxide removal (CDR) and Negative emissions.

Negative emissions

Removal of greenhouse gases (GHGs) from the atmosphere by deliberate human activities, i.e., in addition to the removal that would occur via natural carbon cycle processes. See also Net negative emissions, Net zero emissions, Carbon dioxide removal (CDR) and Greenhouse gas removal (GGR).

Net negative emissions

A situation of net negative emissions is achieved when, as result of human activities, more greenhouse gases are removed from the atmosphere than are emitted into it. Where multiple greenhouse gases are involved, the quantification of negative emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, and others, as well as the chosen time horizon). See also Negative emissions, Net zero emissions and Net zero CO₂ emissions. (p555)

Net zero CO₂ emissions

Net zero carbon dioxide (CO₂) emissions are achieved when anthropogenic CO₂ emissions are balanced globally by anthropogenic CO₂ removals over a specified period. Net zero CO₂ emissions are also referred to as carbon neutrality. See also Net zero emissions and Net negative emissions. (p555)

Net zero emissions

Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple greenhouse gases are involved, the quantification of net zero emissions depends

on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, and others, as well as the chosen time horizon). See also Net zero CO₂ emissions, Negative emissions and Net negative emissions. (p555)

Carbon offset

<https://www.ipcc.ch/2018/06/15/ipcc-meetings-go-carbon-neutral/>

A carbon offset is a reduction in emissions of carbon dioxide or other greenhouse gases made in order to compensate for (“offset”) an emission made elsewhere. The Climate Neutral Now platform works by compensating unavoidable emissions with credits in the Clean Development Mechanism, supporting projects in developing countries.

What exactly is climate neutrality?

<https://unfccc.int/blog/a-beginner-s-guide-to-climate-neutrality>

Climate neutrality refers to the idea of achieving net zero greenhouse gas emissions by balancing those emissions so they are equal (or less than) the emissions that get removed through the planet’s natural absorption; in basic terms it means we reduce our emissions through climate action. As part of this, UN Climate Change launched Climate Neutral Now back in 2015 in order to encourage stakeholders around the world to work towards net zero emissions and a climate neutral world. This would see a world where global emissions are in balance with what is naturally absorbed in ‘sinks’ such as forests and oceans. While the aim is to have a ‘climate neutral’ world by 2050, Climate Neutral Now focuses on the need to take action now in order to reach that target.

Where does carbon offsetting fit into this?

Climate neutrality means that you bring your emissions down to zero; something that applies both to individuals and to organizations. Many organizations are not able to reduce their emissions to zero immediately however, as it will take a number of years for them to make the technological investments and change the habits that climate neutrality requires. But if they don’t want to wait, they can – in addition to the reductions they can make now – also invest in emission reductions outside their organization, known as offsets. This option helps accelerate the global effort to reduce emissions, and puts a ‘carbon price’ on their own organization, providing an economic incentive to reduce their own emissions quicker. Purchasing compensation units is also an option available to individuals and households, as – similarly to organizations – they will have difficulties becoming climate neutral immediately. Offsets are not a long-term solution, and they don’t replace the need for you or your organization to go to zero as fast possible, but they do provide a way to accelerate that journey.

References

IPCC (2018). *Glossary – Global Warming of 1.5 °C*. [online] [ipcc.ch](https://www.ipcc.ch). Available at:

<https://www.ipcc.ch/sr15/chapter/glossary/> [Accessed 6 Dec. 2022].