Climate Action Network International

High-level principles and recommendations for transformative pathways towards "real zero" emissions

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Climate Action Network (CAN) is the world's largest network of civil society organizations working together to promote government action to address the climate crisis, with more than 1300 members in over 120 countries.
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Purpose of this document

In order to achieve the goal to limit planetary warming to 1.5°C from pre-industrial levels, the world needs to urgently embark on radical and fair transformative pathways towards zero emissions of greenhouse gases. **How countries and other non-state actors express these [1]transformative pathway commitments and then achieve them is critical, which is why CAN-International developed this set of high-level principles and recommendations.**

An imperative for action NOW

There is hardly any carbon budget left, which means there can be no delay in action. Emissions must decrease as fast as conceivably possible in rich countries, followed by likewise unprecedented rapid reduction rates also in poor countries – enabled by significantly enhanced support from richer countries for climate mitigation, resilience building, adaptation and Loss and Damage provisions.

The IPCC 2018 special report on 1.5°C estimates the remaining carbon budget for a 67% chance of keeping below 1.5°C global average heating to 420 Gt from 2018 onwards. This only corresponds to 8,5 years at current global emissions levels. The UNEP Emissions Gap report concludes that there will need to be 7.6% *yearly reductions globally* to have a decent chance (67% probability) to keep below 1.5°C by 2100 while still allowing for higher temperatures (overshooting) before that. With no overshooting and less risk acceptance, global reduction rates must be much higher.

For countries with higher capacity and historical responsibility for having caused emissions, the rate of yearly GHG reductions would clearly need to be significantly higher than this global average rate (likely

[1] Environmental Defense Fund (EDF), Conservation International (CI) and National Wildlife Federation (NWF) do not support this position, particularly principle 7.

somewhere between 10 and 20% per year), and including scaled up contributions of climate finance toward mitigation in poorer countries.

The climate crisis is all about what we do now – immediate behavioural and lifestyle changes to reduce consumption, particularly by the rich and powerful; immediate regulations, bans of dirty infrastructure like coal power stations, standards and policies; immediate planning and investments in renewables, and energy and resource efficiency solutions in all sectors in order to have them play out over coming years and decades to move to 100% renewables, ideally well before 2050. There is no scope for delay.

"Real zero" or "net zero"?: Approaches and considerations for setting and implementing transformative pathways

Long-term climate mitigation goals are usually expressed as percentage reductions of emissions at a certain year, many decades ahead. However, policy- and decision-makers should not shift focus from immediate gross CO_2 emissions reductions to believing the illusion that much of the emission reductions can be postponed for later or that removals of CO_2 from the atmosphere can "offset" a large share of present or future emissions. For countries and non-state actors to follow a transformative pathway, climate mitigation commitments and action to meet them need to have sufficiently spaced interim emissions targets (e.g. 2020, 2025, 2030, etc.) that are ambitious in addition to a longer-term goal (e.g. 2040). In this manner, the country or non-state actor will be directed to focus on immediate action and planning to make possible the necessary reductions of its overall cumulative emissions and the heating effect on our planet.

Recently, both countries and non-state actors have increasingly begun adopting long-term climate mitigation goals expressed as "net zero" targets for 2050 or earlier. Net zero targets aggregate emission reductions *and* emission removals (also known as negative emissions) into a single target. Many scientists and actors in civil society have highlighted the risks of establishing targets with a net zero framing. One such risk of net zero targets is that the actor setting the target might plan to achieve the target in part with an uncertain and/or unrealistic amount of emission removals. While certainly many governments and non-state actors are willing to reduce their gross emissions significantly and add on with land use carbon sequestration to reach net-zero, increasingly fossil fuel companies like BP and SHELL use that term to maintain their high level of fossil fuel production and sales, banking on large scale mostly tropical forest protection and reforestation. CAN opposes such schemes as cheating the atmosphere, the people and nature.

Emission removals from ecosystem-based approaches are limited and many technological approaches are either non-existent or risky with high uncertainty of whether or to what extent they can contribute towards meeting the global 1.5C temperature target.

Net zero targets are also problematic in that they may encourage delays if the targets are not rooted in reaching real zero emissions as quickly as possible. Some countries and non-state actors may consider meeting net zero targets with carbon offsets, but this involves significant risks if these offsets lack environmental integrity and additionality. For the reasons above, countries and non-state actors should

be aiming first for “real zero” by reducing emissions to as close to zero as possible across all emission sources.

However, while stopping emissions is an imperative, some emissions that cannot possibly be avoided will need to be removed from the atmosphere. These removals should be achieved mainly through protection and restoration of biodiverse ecosystems, while safeguarding rights, including the rights of indigenous peoples. These approaches minimize risks and offer numerous co-benefits unavailable through other removal approaches. Governments and non-state actors must communicate uncertainties and the degree to which they rely on negative emissions in clear and transparent ways.

These principles and recommendations propose a “real zero” approach as a way to avoid the problems and risks, as outlined above, with the prevailing net zero target setting approach. A real zero approach would mean separate targets for *emissions released into the atmosphere* vs *removals from the atmosphere* as a way to be clearer and more transparent about types and scale of action. In turn, this should help public stakeholders better understand the importance of this distinction and enable them to judge the ambition and likelihood of achieving these separate targets.

The principles and recommendations in this document apply, however, to both net zero and real zero approaches. In other words, a country or non-state actor that maintains a ‘net-zero’ terminology could still robustly apply these CAN principles and recommendations to help setting and implementing a transformative pathway that reduces risks and generates benefits to the climate.

Most long-term emissions pathways that countries and other non-state actors have already set look no further than 2040 or 2050. Yet, in the longer term (e.g. out to 2100), and in order to address potentially escalating climate impacts also under a 1.5C trajectory, total atmospheric CO_2 must also be removed from the atmosphere, because present concentrations of about 418 ppm are already very dangerous to people and planet. CAN urges that those removals be undertaken primarily through the protection and restoration of carbon-rich biodiverse ecosystems. The sooner we reduce the amount of actual emissions put into the atmosphere, the less we will need to rely on removing them.

Generally, CAN calls for a rapid social, economic and just transition in line with international and national fairness and equity. In addition to rich countries supporting poorer countries mitigation and adaptation, national inequalities between the rich and the poor have grown in recent decades. Taxation systems need to be implemented that ensure that the extremely rich and wealthy pay their fair share for this necessary systemic change that will allow governments to provide more social services and justice for all citizens.

Finally, transformative pathways must rapidly reduce emissions of CO_2 in parallel with immediate action to reduce the short-lived climate pollutants (SLCPs): black carbon, methane, nitrous oxide, tropospheric ozone, and hydrofluorocarbons (HFCs). This strategy can avoid significant warming in the shorter term while providing strong, life-saving co-benefits.

Principles and recommendations for transformative pathways towards "real zero" emissions

Taking into account the background above, CAN has developed the following **non-prioritised** 20 principles and recommendations for transformative pathways towards "real zero" emissions (whether expressed using a net zero or "real zero" approach):

1. **Prioritizing near-term action to preserve the remaining global carbon budget:** Long-term targets (e.g. 2040) must be paired with highly ambitious 2025 and 2030 interim climate targets to stay within 1.5C-consistent budgets. It is the total amount of GHGs accumulating in the atmosphere that affect atmospheric warming. The sooner we reduce the rate at which we emit those GHGs, the less accumulation there will be over time, and the less the warming effect will be. It is therefore critical that emission trajectories curve towards zero emissions as soon as possible.

2. **Concurrent mitigation areas:** Emissions reductions should give equal weight to the importance of sustainable, efficient and reducing consumption of energy and other resources. This should boost renewable energy and sustainable diets, including reduced meat consumption and eliminating food waste. Also, in general, efforts to reduce or prevent emissions, including protection of carbon stored in ecosystems, should be prioritized over removing carbon from the atmosphere.

3. **Prioritizing transformative domestic action:** Countries must focus on achieving targets through transformative domestic action to maximize emissions reductions as fast as possible, taking into account equitable country differentiation, social and environmental sustainability, and a Just Transition. For poor countries, large scale transformative domestic action will not be possible, at the necessary scale, without significantly enhanced international support.

4. **Ensuring fair shares and properly differentiated flows of international support:** In order to keep within a 1.5C budget, ambitious targets must be based on equitable differentiation and fair shares between countries and sizable financial, technological and capacity building support to developing countries. For wealthier countries, mandatory targets in line with science and equity require most of their emissions to be reduced over the next one to two decades, with the bulk of emissions cut within the next five to ten years, and with near zero reached as soon as possible after 2030. Wealthy countries have a dual obligation to rapidly maximise radical emissions reductions within their borders and an additional obligation to support climate action in developing countries. This support must follow the "do no harm" principle, and cancel debts in vulnerable countries. Lower income countries require significant support to transform their societies and get to near zero emissions by 2050 at the latest, depending on their relative historical responsibility and capacity. With sufficient support, many developing countries may be able to "leapfrog" fossil fuel-dependent infrastructure and reach near zero earlier.

5. **Prioritizing methods of carbon dioxide removal from the atmosphere that also protect and restore biodiverse ecosystems:** In parallel to putting in place measures to reduce domestic

emissions at source to near zero, countries should address their residual emissions through protection and restoration of biodiverse ecosystems within their own borders as appropriate. Action should not rely on BECCS or other negative emissions technologies that either are unproven at scale or have other potentially negative social or environmental impacts.

6. **Reflecting the reality that only small amounts of ecosystem-based removals can help us reach a "net zero" state:** Many countries and companies' long-term climate mitigation strategies have been expressed as "net zero" strategies in ways that are inappropriate and misleading. The term "net" shall not obfuscate or inhibit action to achieve a country's (or non-state actors) necessary emissions reductions. Countries should make conservative assumptions on the amount of removals available to them given realistic socio-economic and biophysical limits of natural systems to absorb carbon, and the physical and socio-economic limitations of negative emissions technologies. These assumptions should include estimates of how climate change will decrease the potential of many ecosystems to remove and durably store carbon from the atmosphere.

7. **Separating out fossil emissions and biological carbon sinks for transparency and accounting purposes is key:** because of the inertness of fossil fuels underground and the existing human pressure and climate impacts on more vulnerable biological carbon pools on Earth**,** fossil fuel emissions and carbon sinks are not fungible. Countries should have a set of broken-down sectoral targets. And they should have at least three non-fungible separate targets for a) preventing emissions from forests and other ecosystems; b) restoring biological carbon; c) the reduction of fossil fuel and other GHG emissions to the atmosphere. This will also help facilitate the practice of not viewing ecosystem protection and restoration as an alternative to fossil fuel phase out. Further, to address the often unaccounted changes in managed and natural ecosystems that are not covered under "direct human-induced" emissions like forest fires, pests, agricultural expansion, El Niño events, permafrost methane and CO_2 losses etc., countries must regularly report the status of their national carbon stocks in all ecosystems in a qualitative and quantitative manner.

8. **Avoiding social and environmental harm and seeking to contribute to the delivery of other co-benefits:** Transformative pathways strategies must avoid social and environmental harm and seek to contribute to the delivery of co-benefits, including adaptation, food security, SDGs, biodiversity and avoided ecosystem degradation and desertification. Mitigation in all countries must not come at the expense of societies' poor and vulnerable populations, and indeed mitigation on the necessary scale will only occur if climate mobilization lifts up poor people.

9. **Basing strategies to achieve full decarbonization only on sustainable and safe, highly recyclable and endurable, low/zero waste and low-impact technologies and approaches** across all sectors (e.g. energy, transportation, housing, food production, forestry, and manufacturing).

10. **Dramatically reducing demand for all fossil fuels**, including through an immediate and massive increase in investments and deployments of environmentally and socially appropriate renewables and energy efficiency/conservation, as well as immediate and stringent bans, regulations, standards and quotas across all sectors.

11. **Phasing out supply and production of fossil fuels** through a rapid and equitable "managed decline". No new fossil fuel reserves/resources should be exploited and all existing exploration should cease. Successful efforts must include close coordination with local community voices, consideration of local conditions, and communities' needs for just transition and/ or economic diversification. Increased efforts to immediately avoid leakage of methane from any existing fossil fuel supply chains also remain essential, if climate impacts are to be reduced.

12. **Targeting replacement of fossil fuel burning technologies with advanced renewable solutions:** Transformative strategies should incentivize the urgent replacement of fossil fuel burning technologies and should be followed by policy action and investment that targets advanced climate solutions directly, without counterproductive "transitional technologies" such as fossil gas instead of oil and coal or nuclear. This must also include replacement of non-energy use of fossil fuels, such as for steel, plastics and fertilizer production, with sustainable renewable materials and processes.

13. **All sectors should be covered,** even those that are considered hard-to-abate (e.g. aviation, shipping, cement, or steel).

14. **Immediately halting forest and ecosystem loss and degradation:** All countries need to support the immediate full stop of forest and ecosystem loss and degradation. Additionally, ecosystem restoration should prioritize providing resilience to climate impacts, storing and sequestering carbon, and restoring and linking habitats to ensure access to ecosystem services and products and to reduce the edge effect on ecosystem patches.

15. **Practicing democratic, inclusive, participatory stakeholder engagement in line with a Just Transition,** including when national NDCs and long-term strategies are developed**,** and especially taking into account the needs, development perspectives and support required for regions, communities and societal groups most affected.

16. **Addressing inequality:** National NDCs and long-term strategies should address and not exacerbate social inequality.

17. **Regulating financial markets for the Paris Goals and SDGs:** Governments must regulate the global financial market to only incentivize and allow clean, sustainable investments that foster meeting the Paris goals and the SDGs.

18. **Clear and transparent reporting and accounting methodologies** should be used for comparability, transparency, disclosure, and verifiability of targets and policies, and to avoid double counting of emissions reductions or removals. Such information should be relayed sufficiently frequently to allow for review of overall progress, while allowing for exceptions in countries with lower MRV capacities.

19. **Enhanced support from wealthier countries to achieve greater amounts of high-fidelity climate data:** The IPCC and other scientific institutions increasingly lack reliable data--particularly in poorer countries—to understand both the technological and economic potential for zero-emission technologies on a more regional and local scale as well as the present and future potential climate impacts on a regional and local scale, which can then be used to assess policy options in these countries. This includes the collection and systematic review of conventional rural and community knowledge to abate climate change impacts with local solutions.

20. **Government policy-setting processes at the local, regional, national, and international levels must be fully participatory and inclusive** of all stakeholders from business, faith groups, civil society organizations, local communities, trade unions, and indigenous communities. Furthermore, indigenous communities must be classified as rightsholders.