Opportunities for Increasing Ambition of NDCs through Integrated Air Pollution and Climate Change Planning

The Problem

Current Nationally Determined Contributions (NDCs) are not enough to achieve the Paris Agreement goal to limit warming to well below 2°C. Full implementation of current NDCs will result in 2.3 to 3.7°C of warming by 2100[1]. Greenhouse gas (GHG) emissions need to be reduced by at least an additional 12 billion tonnes to limit warming to 2°C, and at least 29 billion tonnes to limit warming to 1.5°C.

The same emissions that lead to climate change also contain toxic air pollutants. Air pollution is now the world's largest environmental health risk, leading to approximately 7 million premature deaths per year and non-fatal health impacts like pre-term birth, aggravated asthma, and agricultural and ecosystem damages.

The Opportunities

Climate change and air pollution have common sources and some pollutants like black carbon and methane (both short-lived climate pollutants (SLCPs) contribute to both.

Reducing SLCPs can rapidly reduce temperature increases in the near-term (e.g. next 25 years), preventing dangerous climate feedbacks such as snow and ice melt, sea-level rise and biodiversity loss.

Current NDCs will prevent approximately 400,000 premature deaths from air pollution in 2050, but taking actions that limit temperature increases to 2°C can prevent over 1 million premature deaths in 2050. But many countries haven't prioritised actions that have joint climate change mitigation and air pollution benefits in their NDCs.

As countries update their NDCs and enhance their climate ambition, the identification, prioritisation and inclusion of mitigation measures that improve air quality and health benefits can increase both political and societal ambition to tackle global climate change.

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

Opportunities and mitigation measures to increase ambition

Opportunity 1: Include specific methane and hydrofluorocarbon (HFC) mitigation measures *Targeting Methane and hydrofluorocarbons, two GHGs with a short-lifetime in the atmosphere will impact near-term climate change. Methane also contributes to ozone air pollution, which affects respiratory health.*	• Minimise venting, flaring and fugitive emissions from oil and gas sector • Minimise methane emissions from coal mining through pre-mine degasification and recovery and oxidation of methane from ventilation air • Minimise methane emissions from solid waste at landfills sites • Upgrade wastewater treatment plants with methane gas recovery • Control agricultural methane emissions from livestock enteric fermentation and manure management • Reduce methane emissions from rice production through intermittent aeration of continuously flooded paddy fields • Eliminate HFC emissions from contained and emissive applications
Opportunity 2: Include specific black carbon measures which have a net reduction in warming *Black carbon is a powerful warming substance and a component of fine particulate matter ($PM_{2.5}$) air pollution, which has the largest impact on human health.*	• Introduce vehicle emission standards for diesel vehicles requiring best available control technology and eliminate high emitting diesel vehicles • Adopt more efficient fuels and technologies for cooking and heating • Replace traditional brick kilns with more efficient brick production techniques • Eliminate open burning of agricultural waste • Replace traditional coke ovens with modern recovery ovens • Eliminate gas flaring in oil and gas sector
Opportunity 3: Include additional CO2 mitigation measures that achieve air quality and human health goals *Carbon dioxide shares many of the same sources as a range of air pollutants, including $PM_{2.5}$ emissions, nitrogen oxides and volatile organic compounds.*	• Replace fossil fuel-based electricity generation with renewable alternatives • Implement energy efficiency standards for industry, households, commercial sector • Increase percentage of electric vehicles in vehicle fleet • Improve public transport, and increase walking and cycling, to reduce number of journeys taken by passenger cars • Control forest and peatland fires
Opportunity 4: Include additional mitigation measures that fully align NDCs with other strategies *(sectoral plans; SDGs; Kigali Amendment; air quality and SLCP plans etc.)*	• Air Quality Strategy/Air Quality Management Plan • National Development Plan/Sustainable Development Goals Voluntary National Reviews • HFC reduction strategy to meet Montreal Protocol Kigali Amendment HFC phase-down schedule • Sectoral Strategies (e.g. road transport plan, agricultural plan, sustainable energy for all strategy etc.)

Integrated air pollution and climate change planning

Strategies to maximise climate and clean air benefits will differ from one country to another. Integrated planning on climate change and air pollution can help identify the most relevant actions to mitigate both impacts simultaneously. It can also align national actions to meet a country's international climate change mitigation ambition and national air quality goals and produce a more efficient planning process.

A practical framework can be used to develop an integrated climate change and air pollution mitigation analysis including assessing the effects of different policies and mitigation measures on greenhouse gases, short-lived climate pollutants and other air pollutant emissions. It allows for the identification, prioritisation and inclusion of a package of measures that can simultaneously achieve a country's climate change mitigation ambition alongside local benefits for air quality and sustainable development. This framework can also be used to develop other climate change planning and reporting processes, like new Climate Change Actions Plans, Long-Term Low Emission Development Strategies, National Communications and/or Biennial Update/Transparency Reports, and facilitate consistency and integration within climate change planning processes.

Seven steps to undertake an integrated climate change and air pollution mitigation analysis

1. Estimate annual emissions of all particles and gases affecting climate, $PM_{2.5}$ and ozone pollution
2. Develop baseline scenarios for all sectors contributing to these emissions over the medium to long-term
3. Evaluate the mitigation potential of all current national plans and strategies that will affect emissions
4. Identify additional policies and measures providing further mitigation potential and benefits (including CH_4, HFC and BCmeasures)
5. Quantify the change in GHG, SLCP and air pollutant emission from implementing those measures
6. Quantify the multiple benefits of implementing those measures (climate, air pollution, development etc.)
7. Prioritise and finalise the selection of the package of mitigation measures and define targets

Revising NDCs

Applying this framework can provide the basis for revising NDCs, and useful information to increase the clarity, transparency and understanding of a country's climate change pledges.

Options to reflect the four opportunities in the NDC, and in the accompanying information include:

- **Reflect additional methane, HFC and CO_2 mitigation in the overall GHG reduction target** to show clearly the overall increase in a country's climate change mitigation ambition.
- **Include specific mitigation measures** to explain how an overall or sectoral GHG target will be achieved, to increase transparency and enable assessment of the full range of multiple climate change, air pollution and sustainable development benefits from their implementation.
- **Indicate the GHG, SLCP and air pollutant emission reductions associated with each mitigation measure** to provide greater specificity on how each mitigation measure contributes to achieving a country's climate change commitment, and be able to evaluate the local air pollution benefits.
- **Consider indicating separate, supplementary methane, HFC, and black carbon mitigation goals** to reflect i) how the NDC will be achieved through mitigation of methane and HFCs, and ii) the additional commitment to mitigating climate change through actions to reduce black carbon.

Using this framework and reflecting these measures is an opportunity to access international funding for climate change mitigation measures with local air pollution and sustainable development benefits. In addition, showing the multiple climate, health, and other benefits of the NDC can broaden the coalition of stakeholders supporting its implementation. Finally, jointly monitoring and tracking of GHGs, SLCPs and other air pollutant emissions is an opportunity to increase capacity for air quality management and to improve coherence between climate planning and other plans.

Download the full guidance at: