

## Key Messages

### Nitrous Oxide (N<sub>2</sub>O) Guidance for NDCs

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#### *What is nitrous oxide (N<sub>2</sub>O)?*

- **Nitrous Oxide (N<sub>2</sub>O)** is a greenhouse gas used in industry and agriculture that depletes the stratospheric ozone layer and has a GWP nearly 300 times that of carbon dioxide over a 100-year period.

#### *Why is it important to tackle nitrous oxide emissions?*

- **N<sub>2</sub>O** -- the third most significant greenhouse gas after carbon dioxide and methane --is nearly 300 times more potent than CO<sub>2</sub> and is also a potent ozone-depleting substance.
- Because of its potency and rapid growth, it is **increasingly recognized as a critical factor in climate change and net zero strategies.**
- Technically and economically feasible options to reduce N<sub>2</sub>O exist and **could deliver important emissions reductions** that continue to protect the ozone layer.
- **N<sub>2</sub>O's long atmospheric lifetime means that the climate and ozone benefits of N<sub>2</sub>O mitigation will manifest after 2050.**
- However, due to the unique chemistry of the nitrogen cycle, **ambitious N<sub>2</sub>O mitigation today will deliver critical co-benefits for local, regional and global air and water quality in the near to mid-future.**
- While the climate benefits will be seen only later in the century, **action in the immediate future is needed to ensure the longer-term benefits.**
- If CO<sub>2</sub> and methane are mitigated but N<sub>2</sub>O emissions remain, **N<sub>2</sub>O could contribute to more significant stratospheric ozone depletion.**

#### *How to include N<sub>2</sub>O in NDCs?*

- **Involve relevant national and local government institutions and experts to adequately assess current policies, practices, capacities, and emissions information.** Doing so will help gather inputs and identify responsibilities for implementation and ensure the involvement and coordination throughout the process.
- **Engage with stakeholders from sectors and activities that generate nitrogen pollution and from entities that have an interest in controlling nitrogen pollution** - this includes farmers and farm cooperatives, fertilizer manufacturers, food companies, sewage treatment managers, air quality regulators, relevant industries, research and educational institutions, civil society, and the public.
- **Consider undertaking a national nitrogen assessment**, taking stock of the body of knowledge involving national nitrogen flows and budgets, including expenditures that impact nitrogen production, consumption, and loss.
- Evaluate options and assess the resources available and needed to undertake options, taking into consideration national circumstances.

#### *What are some tangible ways to address N<sub>2</sub>O in NDCs?*

- Many of the actions required to reduce N<sub>2</sub>O emissions at the same time **prevent environmental degradation and reduce human health risks.**
- Tangible ways to include N<sub>2</sub>O emissions in NDCs include:
  - **Set economy wide N<sub>2</sub>O targets**
  - **Specify nationally relevant sectors for engagement** - including industry, agriculture, waste, transportation, and energy – and set specific mitigation goals by sector
  - **Incorporate N<sub>2</sub>O emissions in the new round of NDCs provides an opportunity to achieve significant gains for mitigating climate change and aiding ozone recovery**
  - **Add potential co-benefits** for health, environment, and adaptation, including by improved nitrogen management