3 August 2023

Convention on Long-Range Transboundary Air Pollution (CLRTAP)
61th session of the Working Group on Strategies and Review
(Geneva, 4-6 September 2023)

Co-mitigation of methane and ammonia emissions from agricultural sources: policy brief and guidance

Comments by the EU and its Member States

The EU and its Member States thank the Task Force on Reactive Nitrogen and the Task Force on Techno-economic Issues for their work on the present document.

To facilitate discussions during the 61st session of the WGSR, we provide the following advance comments. Text suggestions are provided with new text in **bold** and deleted text in ~~strikethrough~~.

We reserve the right to provide additional comments in the next steps.

- In general:
  - The title and status of the document are unclear, referring to *both* policy brief and guidance. Our understanding of this document is that it takes and should take the format rather of *guidance*.
  - Notably in consideration of feed supplements/additives, but also relevant to other aspects: the text might benefit from a brief reflection on the need for caution/verification of laboratory announced results as they might not always be directly transferrable to real life performance. This could be included as a point within section F, on establishing a hierarchy of measures.
  - Throughout the text, there is a need for a different presentation on air pollution vs GHG reduction. Information on air pollution reduction should be prioritised in line with the Air Convention scope, while also pointing to the synergies and co-benefits for the decarbonisation agenda.
- More in detail:
  - The following change should be made in the first paragraph to avoid speculations about potential inclusion of new pollutants in international frameworks:

    1. There are significant interactions between the processes and management practices that contribute to ammonia (NH3) and methane (CH4) emissions from agriculture. Guidance is needed to identify the effects of mitigation measures on both of these gases and potential interactions, as summarized in the present document (see paras. 13–34 below). While some measures offer synergistic benefits, there is an ongoing need to optimize practices in order to minimize trade-offs between the mitigation of the two gases. These interactions highlight

the opportunity to further develop synergies ~~when including both NH3 and CH4 in the Convention on Long-range Transboundary Air Pollution context and in other international mitigation contexts, such as the United Nations Framework Convention on Climate Change (UNFCCC)~~.

- As above, the following change should be done in paragraph 2:

  2. The present work has been carried out under item 2.2.1 of the 2022–2023 workplan for the implementation of the Convention (ECE/EB.AIR/148/Add.1). In this context, the present document outlines the effects of CH4 as an air pollutant and an important greenhouse gas (GHG) and the possible interactions between the mitigation of NH3 and CH4 emissions. This can serve to inform readers about the merits of linking measures to control CH4 and NH3 ~~in the Convention on Long-range Transboundary Air Pollution and as background for future policy development, where continuation of reduction in CH4 and NH3 emissions is key to achieving long-term climate goals, while reducing the effects of NH3 in terms of public health and biodiversity~~.

- Please add "an air pollutant" in paragraph 3:

  3. While the effects of NH3 as an air pollutant have been targeted for many years in air pollution policies, CH4 has, until now, primarily been considered as a GHG, and the regulation of CH4 emissions has been related to GHG reductions under UNFCCC. However, in addition to CH4 being a powerful GHG, it also contributes to ozone (O3) formation in the troposphere. O3, as well as being a GHG, is ***an air pollutant*** *damaging to health, causing inflammation in the respiratory tract and increased premature mortality, as well as contributing to significant crop losses in the United Nations Economic Commission for Europe (ECE) region. O3 is formed in the atmosphere via interactions between nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs), including CH4 among others. Thus, NOx, NMVOCs, CO and VOCs, including CH4, are closely linked in terms of their atmospheric chemistry.*

- In paragraph 3, the text could be simplified / avoid duplication by not referring to both NMVOCs and "VOCs, including CH4" but only to "VOCs, including CH4".
- In paragraph 4, the term "non-methanogenic VOCs" should be replaced by "non-methane VOCs" in line with common Air Convention language, cf for example the EEA/EMEP emission reporting guidebook.
- It should be highlighted more clearly that the table in paragraph 5 uses the EU statistics as an example because it is expected to show a representative distribution for the entire UNECE region. This table should also be formatted so that it becomes more clear that "livestock", "livestock manure" and "other" are subcategories to "Agriculture".
- Paragraph 6: grazing is not a manure management method. Please rephrase.
- Paragraph 8: "efficiency of animal production" may need to be better defined. The term could be interpreted in different ways.

- Paragraph 9: reference should be made to the opportunity/need for co-benefits and synergies with animal welfare objectives. “production-impairing conditions” may need to be defined.
- Paragraph 10.b: Second sentence from last (“Covering solid manure storages will reduce NH3 emissions, but composting manure may lead to CH4 emissions.”) appears to be misplaced, reads like a 10.c) type example.
- Paragraph 10.c: regarding aeration of stored manure and its negative effects on ammonia – assumedly this is then also the case for aeration of landfills, is there a need for updating the draft guidance on methane from landfills and gas to take this point into account? (*have these draft guidances been cross-read for consistency on such points?*)
- Paragraph 10.c: the reference to “increased space requirements per animal…” does not seem to be methane related so does not appear to belong in this paragraph but should be moved to a new separate section on co-benefits/trade-offs beyond the methane/ammonia complex (or else clarify how this sentence relates to methane/ammonia).
- Paragraph 16 refers to supplements “only registered for dairy”. Does this refer to UNECE-wide registration or is the case only in parts of the UNECE region? Clarification is also needed in this paragraph, e.g.:

  > *Because 3-NOP quickly breaks down in the rumen (within hours), efficacy drops when not fed **the supplement** frequently (e.g., during grazing). An effect on NH3 emission from excreta will **then** not occur.*

- Paragraph 18: is it really the case “for pig production” that the outdoors temperature is significantly lower than indoors also other than in winter or in colder climates? Otherwise please rephrase, e.g.

  > *…i.e. in winter~~,~~ **and** in colder climates ~~and~~**, in particular** for pig production.*

- The conclusion from paragraphs 20-21 does not come across very clearly with the current drafting. Is it correctly understood that the main message here is that low pH and low temperature *reduces* risk of both methane and ammonia emissions but air/oxygen reduces methane while increasing ammonia emissions? If yes, please consider redrafting the paragraph so this is more easily transmitted.
- The methane link/relevance of paragraph 24 is not clear. Does this paragraph add value to this particular guidance and its topic?
- Paragraph 28: cross-reference to the draft guidance on methane from landfills and gas would be useful. Have these draft guidances been cross-checked for consistency in the messages regarding biogas production/recovery?

- Please rephrase paragraph 29 as follows:

  29. Aeration of slurry in storage is sometimes used to reduce the amount of N by encouraging nitrification and denitrification. This method is mainly used in areas where the production of manure N exceeds utilization capacity of the land ***(see~~,~~ ~~as~~*** *defin****itioned in~~by~~*** *the European Union Nitrates Directive****)****. This aeration is also likely to reduce CH4 emission from the slurry. However, the deliberate loss of N contradicts the principles of the circular bioeconomy and is also likely to increase NH3 emissions.*