

Written evidence submitted by 'Clean Air in London'

Executive summary

1. As a campaigner for 'clean air', 'Clean Air in London' (CAL) is pleased to respond to the opportunity to submit written evidence on the Agriculture Bill. Thank you for offering the opportunity.
2. CAL supports, in general, the Government's proposals for new financial assistance powers in Clause 1 of the Agriculture Bill.
3. CAL considers it very odd however that the powers proposed would give financial assistance explicitly 'for or in connection with' water quality, land, quality of the soil, health of plants etc but not 'emissions to the air' or 'air quality'.
4. Farming is the 'dominant source' of ammonia (NH₃) and a major source of methane (CH₄) emissions to the air. The former is a precursor that reacts with other pollutants in the air to form fine particles (PM_{2.5}) which are the main cause of premature deaths from air pollution. NH₃ is regulated by the National Emission Ceilings Regulations 2018 and the 1999 Gothenburg Protocol. CH₄ is a powerful greenhouse gas contributing to climate change.
5. CAL has taken legal advice on this matter from Harrison Grant Solicitors but all errors and omissions in this submission are the responsibility of CAL alone.

Clean Air in London

6. Clean Air in London (CAL) is a not-for-profit company limited by guarantee with a mission to achieve full compliance with World Health Organisation (WHO) guidelines for air quality throughout London and elsewhere.
7. CAL is non-party organisation with a large number of supporters both organisations and individuals. CAL is independent of government funding and funded instead by donations and sponsors such as Camfil, which is a world leader in air filters for buildings.
8. CAL provides a channel for both public concern and expert opinion on air pollution. This document provides both general and expert comments in response to the opportunity to provide evidence and make recommendations for action.
9. Further information about CAL can be seen at: <https://cleanair.london>.

Factual information

10. Farming is a major source of greenhouse gases and other air pollutants. It is the 'dominant source' of ammonia (NH₃) emissions in the UK¹ and a major source of methane (CH₄) emissions to the air.
11. The Climate Change Committee's report titled 'Land use: Policies for a Net Zero UK' (published on 23 January 2020) estimated that the agriculture, forestry and other land use sector accounted for around 13% of carbon dioxide (CO₂), 44% of CH₄ and 82% of nitrous oxide (N₂O) emissions to the air from human activities globally during 2007-2016 (page 20). These are all important greenhouse gases contributing to climate change. The report also explained how these emissions can be reduced.

¹ Page 271 https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1904121008_GB_IIR_2019_v2.0.pdf

12. Defra's publication 'Emissions of air pollutants in the UK, 1970 to 2018 – Summary'² published on 14 February 2020 showed NH₃ as the only air pollutant above the index line compared to 2008. Recent emissions are much worse than five and 10 years ago. CAL considers this unacceptable. Please see Defra's detailed estimates of NH₃ emissions.³
13. Defra's report titled UK Informative Inventory Report (1990 to 2017) (Final Version (v2.0))⁴ (published in April 2019) explained in Section 9.2.14.1 that emissions of NH₃ have increased recently as a result of increasing livestock numbers, increasing milk yield (and hence nitrogen excretion) in dairy cows and an increase in the proportion of nitrogen fertiliser that is applied as urea which is associated with a much higher emission factor than other fertiliser types.
14. Tables 9-4 and 9-5 on pages 275 and 276 of the same report show that emissions of NH₃ are predicted to exceed the total emission ceiling allowed by the National Emission Ceilings Regulations 2018 and the 1999 Gothenburg Protocol to the UNECE Convention on Long Range Transboundary Air Pollution (CLRTAP) for the UK by 31 and 51 kilotonnes in 2020 and 2030 respectively. These are binding legal limits. The legislation contains a default set of options to reduce ammonia emissions which often involve low-tech investments and changes in farming practices⁵.
15. The Air Quality Expert Group's report titled 'PM_{2.5} in the UK' (published in 2012) explained that NH₃ is an important precursor and component of 'secondary' PM_{2.5}. The report explained that not all of the PM_{2.5} found in the atmosphere has been directly emitted by 'primary sources'. There are significant sources of both 'primary' and 'secondary' PM, the latter being formed in the atmosphere by chemical reactions involving primary emitted precursor species. Each 'secondary' PM component would thus have its own primary PM precursor or precursors. Particulate sulphate is a secondary PM component with sulphur dioxide (SO₂) and NH₃ as its primary precursors. Ammonium nitrate is associated with an increase in the PM mass. See section 4.3 on pages 92 to 97.
16. A report by DG Research titled 'Research findings in support of the EU Air Quality Review' in 2013 estimated in Table 2.1 on page 38 that a 50% reduction in emissions of NH₃ would reduce PM_{2.5} concentrations in London by 4 ug/m³ (16% at that time)⁶.
17. According to the Public Health Indicators, the fraction of mortality attributable to fine particulate (PM_{2.5}) air pollution rose in London and England in the latest year (2018) from 6.5% to 6.6% and 5.1% to 5.2% respectively⁷.
18. Population-weighted total annual mean PM_{2.5} concentrations in the East of England, London and South East of England were 10.2, 12.1 and 10.5 micrograms per cubic metre (ug/m³) respectively in 2018 according to Defra compared to the current World Health Organisation (WHO) guideline of 10 ug/m³ ^{Footnote 8}. Please bear in mind that actual concentrations for individuals may be considerably higher (or lower) than the population-weighted average.

² Defra statistics (published on 14/2/20) <https://www.gov.uk/government/publications/emissions-of-air-pollutants/emissions-of-air-pollutants-in-the-uk-1970-to-2018-summary>

³ NH₃ emissions <https://www.gov.uk/government/publications/emissions-of-air-pollutants/emissions-of-air-pollutants-in-the-uk-1970-to-2018-ammonia-nh3>

⁴ NECD https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1904121008_GB_IIR_2019_v2.0.pdf

⁵ Default options to reduce NH₃ https://ec.europa.eu/commission/presscorner/detail/en/MEMO_16_4372

⁶ DGR report <http://nora.nerc.ac.uk/id/eprint/504622/1/N504622CR.pdf>

⁷ Public Health Indicators <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/4/gid/1000043/pat/6/par/E12000007/ati/102/are/E09000002/iid/30101/age/230/sex/4>

⁸ <https://uk-air.defra.gov.uk/data/pcm-data>

19. In CAL's expert opinion, emerging scientific evidence suggests that the WHO should halve its air quality guideline for annual mean concentrations of PM_{2.5} in its forthcoming review of air quality guidelines expected to be published in 2021 i.e. to 5 ug/m³ ^{Footnote 9.}

Recommendations for action

20. CAL proposes amendments to include the management of air, emissions to air, air pollution and the mitigation of its effects in the Agriculture Bill.

21. The reasons for the amendments include:

- a. Emissions to the air from agriculture form a significant contribution to air pollution in the UK and the air pollution in turn harms human health and the environment.
- b. The UK is heading for a breach of the caps on ammonia (NH₃) and particle (PM_{2.5}) emissions in 2020 (caps specified under the National Emissions Ceilings Regulations 2018).
- c. Financial help should extend to support for cleaner and healthier air. Indeed, the explanatory note says: "*Subsection (1)(a) will enable the Secretary of State to provide financial assistance for the delivery of environmental outcomes such as cleaner air, clean and plentiful water and thriving plants and wildlife by carrying out environmentally beneficial land and water management activities*" (page 8).

22. However, as drafted Clause 1 (a) does not include air, or emissions to the air, or air quality or damage caused by air pollution. The amendments proposed by CAL are intended to remedy that omission.

23. The text of Clause 1 of the Agriculture Bill is:

Secretary of State's powers to give financial assistance

The Secretary of State may give financial assistance for or in connection with any one or more of the following purposes—

- a) managing land or water in a way that protects or improves the environment;*
- b) supporting public access to and enjoyment of the countryside, farmland or woodland and better understanding of the environment;*
- c) managing land or water in a way that maintains, restores or enhances cultural or natural heritage;*
- d) managing land, water or livestock in a way that mitigates or adapts to climate change;*
- e) managing land or water in a way that prevents, reduces or protects from environmental hazards;*
- f) protecting or improving the health or welfare of livestock;*
- g) conserving native livestock, native equines or genetic resources relating to any such animal;*
- h) protecting or improving the health of plants;*
- i) conserving plants grown or used in carrying on an agricultural, horticultural or forestry activity, their wild relatives or genetic resources relating to any such plant;*

⁹ HEI meeting on 21 and 22 January 2020 <https://www.healtheffects.org/meeting/brussels-meeting-air-pollution-and-health-recent-advances-inform-european-green-deal>

j) protecting or improving the quality of soil.

24. Text of CAL's proposed amendments:

Clause 1 (a), page 2, line 8 after "water" insert "or emissions to the air";

Clause 1 (c), page 2, line 11 after "water" insert "or emissions to the air"

Clause 1 (d), page 2, line 13 after "livestock" insert "or emissions to the air"

Clause 1(e), page 2, line 15 after "water" insert ", emissions to the air"

Clause 1 (j), page 2, line 24 after "soil" delete the full stop and add three new sub clauses:

(k) reducing emissions to the air including but not limited to ammonia and methane;"

(l) improving air quality; and

(m) mitigating the harmful effects of air pollution on the natural environment."

25. In CAL's expert opinion, these amendments would address a significant flaw in the current version of the Agriculture Bill.

26. CAL hopes that there will be cross-party and wider support for these proposed amendments.