Environmental Audit Committee

Air Pollution in England Consultation

The Vegan Society Response

Overarching Issues

Industrialised farming of animals is an inefficient way to produce food and contributes significantly to air pollution. Our submission therefore makes the case that transition towards more plant-based diets and agricultural production provide multiple benefits, including reducing air pollution.

We believe that there is insufficient democratic oversight of the rapid growth of industrialised animal farming in England. Few among the public and policymakers are aware that over 85% of more than 1 billion animals farmed in England each year live in confined systems (World Animal Protection 2024; Bryant Research 2025). This trend is bad for local air quality, wider environmental protection, the animals involved, and also, for farmers and farming communities.

This type of agri-food industry does not supply nutrition as efficiently as plant-based agriculture, yet contributes more to air pollution. This pollution arises through chemical use and transport for feed crops (which uses more land and inputs such as fertiliser than growing food for direct human consumption) and directly through excreta handling, as well as chemical use and pollution arising from transport, slaughterhouses and temperature-controlled distribution (CIWF 2017). Crops intended for animals are often disproportionately treated with agrochemicals, where higher residue levels are permitted (HSE 2021), including fertilisers which result in excess air pollution from ammonia. The 2024 Air Pollution Trends report shows hotspots of ammonia (up to sixty times higher than background) in areas of England with industrial scale farming of chickens and pigs in particular (Pitcairn et al. 2002, Rowe et al. 2024).

Because agriculture is a major source of nitrogen pollution (70% of nitrous oxide, 87% of ammonia in 2022, DEFRA 2024a, see Q1), increasing the nitrogen use efficiency of our food production will reduce air pollution. Feeding plant proteins to animals in farming has a much lower nitrogen use efficiency than eating those plant protein foods directly ourselves. Animals excrete 55-95% of the nitrogen in the plant protein which they consume including as nitrous oxide, and as ammonia from urine and manure (see Q1,5). Eating plant protein-based foods ourselves increases nitrogen use efficiency to around 20%, reducing air pollution significantly

compared to eating animal protein-based foods whose efficiency is around 8% (Alpro Foundation 2021).

This Call for Evidence explicitly states that the Environmental Audit Committee, "encourage members of underrepresented groups to submit written evidence." and that "The House of Commons is committed to diversity and inclusion". The Vegan Society directly represents an estimated c. 500,000 vegans in England, as well as indirectly amplifying the views of many more people who seek plant-based alternatives to industrial scale farming of animals on health grounds as well as from ethical and environmental philosophical and religious beliefs. We are therefore submitting written evidence on behalf of underrepresented groups, those who hold the philosophical and ethical belief of veganism, which along with religious beliefs and environmentalism is protected under the Equality Act 2010 (Postle 2020).

Transition to healthy and sustainable diets and the reduction and ultimately cessation of industrial farming of animals must be a strategic goal for government across departments, for the benefit of everyone including workers, local communities, our public health, non-human animals and our shared planet. This must include climate policy, as improving air quality and reducing air pollution are inextricably linked with achieving Net Zero greenhouse gas emissions (Just Food Transition Network 2024).

Transitioning towards plant protein and other crop production for direct human consumption, can help to create an agri-food system which ensures clean air for all. Policy proposals to achieve these goals are outlined in our response to Q7.

Responses to EAC Key Questions

1. What are the main causes and sources of air pollution?

Industrialised farming of animals is one of the main causes and sources of air pollution (UN FAO 2006, CIWF 2017). We note that the World Health Organisation defines, "Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere." (WHO undated 1). The WHO has highlighted that air pollutants such as methane and black carbon – both associated with animal agriculture - are simultaneously direct public health risks, and also powerful short-lived climate pollutants (greenhouse gases) which cause indirect risks to long-term public health including food security (WHO undated 2).

Key air pollutants from agriculture include nitrogen-containing compounds (NO2, NO, NH3, N2O), as well as volatile organic compounds (VOC, including methane) and some agro-chemicals particularly used in growing feed crops for animals in

industrial scale farming (AQEG 2018). Agriculture accounted for 70% of nitrous oxide emissions, 49% of methane emissions and 87% of ammonia emissions in 2022 (DEFRA 2024a).

Animal agriculture specifically is a driver of nitrous oxide, ammonia and methane in two principle ways: 1) through farmed animal excretions, and 2) the use of nitrogen-based fertilisers to grow feed, which demands more land and inputs than if food is grown directly for human consumption. Animal manures in large quantities, especially in 'slurry' form, emit very significant volumes of ammonia gas, much of which eventually becomes nitrous oxide, a potent greenhouse gas.

The wide-ranging harmful impact of ammonia emissions led the government in 2019 to aim to reduce emissions of ammonia against the 2005 baseline by 16% by 2030. This DEFRA 2019 Clean Air Strategy states:

"The agriculture sector accounts for 88% of UK emissions of ammonia, which is emitted during storage and spreading of manures and slurries and from the application of inorganic fertilisers. Ammonia damages sensitive natural habitats and contributes to particulate pollution in urban areas." (DEFRA 2019)

This was virtually unchanged by 2023, when agriculture still accounted for 87% of the UK's ammonia emissions (DEFRA 2024). Agriculture also causes 49% of the UK's methane emissions, and 70% of nitrous oxide emission (Hicks et al. 2022). In England, these emissions are largely from industrialised farming of animals, which also significantly contributes to PM2.5 air pollution. PM2.5 (fine particulate below 2.5 μm in diameter) can get deep in our lungs, and are linked to chronic respiratory illnesses and early death (Wyer et al. 2022).

2. What evidence exists of the extent of air pollution directly or indirectly impacting the health of individuals or communities in England?

a. What are the differential impacts, geographically, and across socioeconomic groups, of poor air quality?

b. What are the differential impacts of air pollution across different age groups? How does this impact future generations?

No comment.

3. What are the wider environmental impacts of air pollution, and what are their cascading effects? What evidence exists of direct or indirect impact?

i.e., reduced crop yields, biodiversity loss, pollinator loss, acid rain, ozone depletion, depleted water/soil quality, etc.

a. What are the differential impacts of air pollution geographically, including ammonia from agriculture, slurry spreading, pesticide drift, and major road corridors? Is current policy overly urban-centred?

No comment.

4. Are the current national targets and performance for air pollution, such as those in the Air Quality Environment Act target delivery plan and the 10-year Health Plan, adequate, ambitious and wide-ranging enough to provide adequate protection for public health and the environment, and how do they compare with WHO recommendations?

a. What are the major barriers and/or challenges to achieving national targets on air quality?

No comment.

5. Do local authorities in England have the resources and powers to enforce existing legislation and regulation to improve local air quality?

a. What examples of best practice exist locally and how well are these being rolled out elsewhere?

b. How effectively are national government targets and local government actions aligned?

Local Authorities in England are inconsistent in how they include air pollution impact assessments in planning decisions about new sites of industrialised farming of animals. Planning permission has been given despite significant likelihood of air pollution and other environmental harms, as demonstrated by thousands of environmental regulation breaches by such businesses in England in recent years. These include the routine improper discharging of slurry at some sites, which creates air pollution in the forms of ammonia, and nitrous oxide (BIJ 2024).

Several planning permissions for intensive farms in England have recently been overturned due to inadequate assessment of environmental impacts. A very recent example is a successful judicial review claimed by Communities Against Factory Farming (CAFF), which found East Devon District Council had unlawfully granted (despite 700 objections), and was thus required to withdraw, planning permission for, a new shed intended to confine 200 calves at Northcombe Farm (CAFF 2026).

Local Authorities therefore need more resources to be able to robustly evaluate the air pollution from industrial scale farming of animals in their areas. They should have the powers to close down facilities in their areas which are disproportionately causing air pollution compared to the public goods they supply, in the context of climate change, air quality and public health targets.

6. Does the Government provide sufficient funding and devolved powers to comprehensively monitor air quality? Is data capture and analysis sufficient to provide a detailed and accurate assessment of air quality within England?

No comment.

7. How joined up is government in planning, policies and action towards national targets and fostering communication and data sharing between departments?

a. Is DEFRA leadership sufficient to drive change across government?

b. Which other departments have the greatest opportunity to impact air pollution levels and how are their policies impacting on this?

c. To what extent is air quality policy interacting with climate change mitigation, nature recovery and land use planning? How can benefits be maximised through joined up policy?

Direct pollution from industrial animal farms , and farms producing animal feed is a major factor in air pollution. Animal-based foods are also linked with other health issues, including increased risk for Type II diabetes, cardiovascular disease and some cancers. Existing health advice is to eat a more plant-based diet (Eatwell Guide 2024). Therefore, the Department for the Environment, Food and Rural Affairs (DEFRA) must work closely with the Department of Health and Social Care to shift the production and consumption of food towards less polluting and more healthy plant-based foods.

Currently, government is still too fragmented in the planning, policies and actions needed to rebuild a health and sustainable agri-food system for the UK. The Good Food Cycle framework announced by Defra in 2025 offers the opportunity to foster dietary change towards plant-based diets, and increase support for farmers growing healthy plant-based proteins and other foods. The interdepartmental Ministerial Food Strategy Group provides the opportunity for a cross-government approach and positive action that can reduce air pollution, in addition to its other goals.

Joined-up policy on dietary transition is also relevant in the relationship between air pollution and climate change. The Climate Change Committee's Seventh Carbon Budget (CCC 2025) Balanced Pathway calls for policies which reduce demand for activities which disproportionately cause greenhouse gas (GHG) emissions. The CCC explicitly includes policies top reduce the numbers of cattle and sheep in farming by 27% by 2040 (from 2023). This is because nearly two-thirds (63%) of agricultural GHG emissions, and all agricultural methane emissions, in 2022 were directly emitted from animals in farming (49% from ruminant enteric fermentation, 14% excreta).

The UK is a centre of technological innovation with significant vegan and plant-based populations, so we are well placed to lead the world in the growth of plant-based food. The Departments for Energy Security and Net Zero, for Business and Trade, for Science, Innovation and Technology and for Education and Skills therefore also have roles to play in this transition.

The Vegan Society is one of a group of more than 50 organisations who have submitted the joint policy proposal, “Reaping the Benefits of Plant-Rich Diets: The Ten Point Plan” to the UK Government (Foodrise et al. 2025), containing measures to facilitate this shift and ultimately reduce air pollution in England from agriculture. These proposals also support our environmental – including climate change, and air pollution - and public health policy targets.

The Ten Point Plan Recommendations, which are strategic and cut across government departments, are:

1. Leverage public procurement and catering to source and provide more plant-based foods, normalising plant-rich diets and catalysing growth in the market.

2. Encourage food supply companies to transition towards a higher proportion of sales of plant-based foods.

3. Bolster food security and economic growth through support for the farmers to produce more vegetables, legumes, fruit, nuts, seeds and wholegrains for food.

4. Support farmers to increase production of plant proteins for food.

5. Make it easier and more affordable for people to access and eat healthy food.

6. Raise public understanding of the health and environmental benefits of healthy plant-rich foods and diets.

7. Collaborate to improve food labelling to raise public understanding of health, environmental and animal welfare impacts.

8. Collaborate to improve training for health and food professionals in regard to healthy, plant-rich foods.

9. Collaborate to update, reform and apply the Eatwell Guide dietary guidelines.

10. Collaborate to increase investment in and support for healthy, sustainable alternative proteins.

We believe the following policy areas are particularly important for ensuring our agri-food system can cut air pollution:

A) Set a target to increase how much plant protein we eat

To improve air quality and reduce air pollution, ambitious targets grounded in strong evidence are essential. We must at least achieve the shift to plant protein foods proposed by the Climate Change Committee (CCC 2025). The more ambitious targets proposed Greenpeace Europe (2020) are an achievable route to greater progress.

B) Support farmers for a just transition to more sustainable food systems

Supporting biosphere managers to move away from the most polluting techniques is crucial.

This requires realistic cross-sector plans to support growth for plant-based protein (including grains and legumes) grown in the UK, and manage the transition away from the industrial scale farming of animals. This must include plans for land use, re-skilling, finance and other practical support for farmers.

Investment in edible legume farming for direct food use, such as Canada's decades-long focus on pulses, or Protein Aid Schemes such as in Ireland, or making protein crop support schemes for new entrants to farming, will be key (The Vegan Society 2017).

C) Support growth and innovation in the plant-based foods sector

The UK market for meat substitutes is already worth around £900 million (the second largest plant protein market in Europe, Statistica 2025) with around a third of residents using plant-based options (GFI 2025). Developing and manufacturing plant-based proteins in the UK is creating skilled jobs in farming, research, manufacturing and production with a potential turnover of over £6bn and 25,000 jobs by 2035 (Green Alliance 2023). Increased Government funding, supportive public procurement practices, and business promotion can drive innovative growth in the UK plant-based market. A statutory duty on large food companies to publish annual plant-based food sales, including proportion of protein from plant-based sources, will help.

Mandatory food labelling providing consistent, accessible information about the environmental impacts of food products will also drive consumer demand, helping to facilitate a just transition for farmers away from forms of agriculture which disproportionately produce air (and other) pollution.

D) Prioritise healthy and sustainable plant-based foods in public procurement

Our public procurement process for food needs to prioritise health and sustainability, as well as appealing and culturally appropriate meals. We need to update the Government Buying Standards for Food to ensure we on are investing in food that supports public health through plant-based and vegan-friendly dishes on all public sector menus.

E) Promote the health benefits of plant-based diets

We need public health campaigns which actively promote well-planned plant-based diets based on their health and sustainability. This evidence should be incorporated into strategies for the reduction of risks of diabetes, cardiovascular disease and other diet-related health conditions. Our Eatwell Guide should be aligned with sustainability and well as health, as in Germany (DGE 2024), with plant-based,

vegan-relevant advice. To support this, training on the benefits of whole-food plant based and vegan diets should be provided for all health care professionals.

England's full agri-food value chain should be transparently re-analysed to show how transitioning towards plant-based protein 'from farm to fork' can substantially cut the air pollution we create and cause by our food choices. In this way, air quality policy can pro-actively support climate change mitigation, nature recovery and land use planning, through joined up policy on the plant-based agri-food system transition.

8. How well is the Government spreading awareness of the impacts of poor air quality and promoting action being taken to tackle the issue?

a. How can communities be better empowered to strengthen accountability and drive local action?

No comment.

9. What are the economic or freedom of choice arguments for or against further action on air pollution?

a. What actions can be taken for a just transition and economic fairness for communities? How can the costs and benefits for cleaner air be shared fairly?

No comment.

10. *How does UK air quality regulation compare with international counterparts? What comparisons or best practice can be learned from other countries? Has the UK kept pace with its international counterparts?*

No comment.

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