

Written evidence from Paula Feehan (MET0034)

My name is Paula Feehan and I am submitting this submission in a personal capacity as someone who has completed an MSc in food policy focusing on animal agriculture and how different approaches can mitigate climate change. I have worked for over 15 years in international development and environmental non-governmental organisations campaigning on climate change. I would be happy to give evidence to the Committee in person.

The Committee has highlighted its interest in exploring whether the UK is on track to achieve the target set out in the Global Methane Pledge, of which it is a signatory, and in which areas UK action could have the greatest impact.

The premise of this submission is that the UK government will need to urgently adapt its approach to the agriculture sector if it wants to achieve methane emission targets. The UK will need to move away from an over-reliance on technological fixes and voluntary approaches and move towards changing food production systems and consumption patterns (diet), reducing the current animal herd size and demanding mandatory climate targets within the animal agricultural sector.

The submission focuses on methane emissions relating to agriculture only, and answers questions within the following sections: overview, international commitments, data measurement and monitoring, UK methane emissions and sectors, and agriculture.

Overview (1,2)

What is the impact of methane on climate change and warming, and how does it differ from other greenhouse gases?

The Intergovernmental Panel on Climate Change (IPCC) released the Sixth Assessment Report in August 2021, which declared that 'methane is an important driver of current global warming' (p.9).

Methane is the second most important greenhouse gas (GHG) after carbon dioxide and is responsible for 0.5°C of warming of the planet; and animal agriculture is the largest source of anthropogenic methane emissions. Therefore, addressing how we produce and consume food is a critical policy lever in achieving the UK methane emission targets.

There are two key differences to carbon dioxide:

- I. Methane is an **extremely potent gas** as it has 82.5 times more warming potential than carbon dioxide over a twenty-year timespan.

- II. It has a **relatively short-lived** atmospheric lifetime; methane degrades in approximately 12 years.

Since methane is short-lived, decreasing it now would lead to observable declines in the rate of warming within decades.

What are the main benefits of delivering methane reduction targets?

Methane is the 'low hanging fruit' for climate policy. Due to its short lifespan, the rapid reduction of methane emissions presents itself as a key opportunity to slow the rate of warming and ensure we achieve 1.5°C.

The United Nations Environment Programme Executive Director Inger Anderson has said: 'Cutting methane is the strongest lever we have to slow climate change over the next 25 years and complements necessary efforts to reduce carbon dioxide.'

How can we achieve this?

An increasing number of government bodies, international institutions, think tanks, scientists and non-governmental organisations (UK Climate Change Committee 2023, UNEP 2021, Chatham House 2021, FAIRR 2021, Harwatt 2020, Hedenus *et al.* 2014, Ripple *et al.* 2014; Greenpeace 2021, Changing Markets 2022) argue that addressing food production systems and consumption patterns, including reduction of animal herd sizes, presents positive opportunities to achieve methane emissions reduction goals and avoid global temperature rise.

As stated in this Committee's methane inquiry introduction, agriculture represents the largest contribution to methane emissions in the UK (49.2% of total UK methane emissions in 2022). Therefore, reducing meat and dairy production and consumption in favour of plant-based foods should feature prominently in methane emissions plans.

Reductions in the production and consumption of meat and dairy also offer numerous co-benefits, leading to more sustainable diets from a more sustainable food system. Eat-Lancet (2019), FAO (2020), WEF (2020) outline these co-benefits as: (1) improved health outcomes, (2) reversal of biodiversity loss, (3) decreased deforestation, (4) cost savings through reduced health care costs (5) reduction of other GHG emissions associated with meat and dairy production including carbon dioxide and nitrous oxide and (6) more efficient and sustainable land use. Other sources including Chatham House (2021), Eat-Lancet (2019) and UNEP (2018) attest that these benefits could generate policy coherence across multiple global priorities, including Sustainable Development Goals (SDGs) integrating climate, health and environmental policies.

There are also economic benefits. A recent report from FAIRR (a membership-based investor network representing \$48 trillion worth of investment) declared that investors are calling for a clear, robust and meaningful roadmap for the agricultural sector to align itself to the 1.5°C target. A more detailed roadmap would evaluate the current risks accurately and divert capital to prioritise investments in opportunity sectors such as sustainable protein (p13).

This submission argues therefore that UK methane emissions plans must focus on agriculture more prominently, and mitigation efforts must include changes to food production and consumption.

International Commitments (Question 2)

2. What is your assessment of the Global Methane Pledge: Is the UK on track to meet it? If not, how could this be accelerated?

At the 2021 UN Climate Conference (COP 26) in Glasgow, 110 countries (including the UK) committed to the Global Methane Pledge ('the Pledge') which has the collective goal of reducing global methane emissions by 30% by 2030 compared with a 2020 baseline.

The Pledge was a step in the right direction, but there are two key problems:

- I.* The UNEP Global Methane Assessment (GMA) declared that due to the seriousness of the climate crisis methane emissions 'should be reduced by at least 45% in this critical decade of climate action (UNEP Global Methane Assessment'. The current methane Pledge target is set at 30%. This target is not ambitious enough if we are to achieve 1.5°C.
- II.* The Pledge provides agriculture with a unique set of exemptions and privileges allowing it to operate with less environmental regulation and oversight than any other industry. The Pledge says that government should focus on incentives and partnerships with farmers as opposed to government regulation. This 'agricultural exceptionalism' is all too common in climate policy, compared to the energy and transport sectors.

In terms of how on track the UK is to meet the targets, I note the assessment made by the UK Climate Change Committee in their [Report to Parliament in June 2023](#). The report stated: 'With current plans, it is unlikely that the UK would achieve a reduction in methane emissions in line with the Global Methane Pledge of a 30% reduction in methane emissions compared to 2020 levels' (p9).

The report described the UK's commitment as 'insufficient' and 'lacking in detail' (my emphasis):

- While the UK has had a role in advancing progress on initiatives on forests and ZEVs, its **contribution to the Global Methane Pledge remains weak** (p52).
- **The UK's action on methane is insufficient.** The Government has not set out a UK-specific 30% reduction on 2020 levels by 2030 commitment to support the Global Methane Pledge and the Methane Memorandum brought forward **high-level intentions rather than detailed plans** for sectoral reductions (p66).
- Government plans all have significant delivery risks. This is particularly the case in agriculture where some **plans are completely insufficient with a heavy reliance on voluntary uptake of measures**. It is therefore **unlikely that the UK would achieve a 30% reduction in emissions by 2030 with current plans** (p86).

The [Environment Agency Methane Action Plan](#) which was released on 10 April 2024 is yet again very light on detailed plans, does not address reducing animal herd size, does not address changing production systems and consumption patterns, does not include greater regulation of the sector and once again relies on technological fixes and voluntary changes in land use and land management.

An indicator of the *emphasis* of the current UK approach to methane emissions (and what is missing) is provided by a quick analysis of word content within the Methane Action Plan. Within a 15-page plan addressing methane, with agriculture the largest source of emissions:

- agriculture is only mentioned 3 times
- farming is mentioned only once
- land use, land management, herd size are not mentioned at all
- and there is a total silence about food production and consumption (more sustainable food production practices/changing demand for meat and dairy).

The UK is not on track to achieve the commitments made in the Global Methane Pledge.

To accelerate delivery on commitments, this submission argues (aligned with the UK Climate Change Committee) that that the UK government should support the public to a shift to a diet with lower meat and dairy consumption. Two recommendations from the UK Climate Change Committee Report give specific detail on ways to accelerate this change:

- **Diet change.** The government has set out no plans to support the public to shift to a lower-carbon diet (recommendation R2022-036). If meat and

dairy consumption were reduced by 20% by 2030 as assumed in our Balanced Pathway, an additional emissions reduction of 5 MtCO₂e could be possible. This option would also help with the reduction in methane emissions required by the Methane Pledge (p101).

- **Increased innovation in diet.** If changes in diet were to follow our Tailwinds scenario, which on top of the 20% reduction in meat and dairy by 2030 discussed above, has a significant contribution from lab-grown meat, an additional 2 MtCO₂e of abatement could be achieved (on top of the 5 MtCO₂e discussed above for diet change under the Balanced Pathway) (p202).

Data measurement and monitoring (Question 11)

11. What are the advantages and disadvantages of available metrics used to report and compare methane emissions including GWP100 and GWP*?

The advancement of GWP* by the meat and dairy industry (and some governments) will radically change how livestock emissions are reported. This is important given that animal agriculture is the largest source of human-caused methane emissions.

Currently, governments and the IPCC use GWP100 to measure the warming potential of total GHG emissions over a 100-year period. These are expressed in carbon dioxide equivalents.

GWP* on the other hand focuses on changes in the rate of emissions between two points in time (usually over a decadal timescale) rather than the absolute level of emissions. Depending on the baseline year, the same volume of methane emissions can be described as causing warming, no warming or even cooling.

GWP* will allow countries and companies to present minor methane reductions as negative emissions or cooling, making meat and dairy production appear climate-neutral and escape significant transformation of food production and consumption systems.

The use of GWP* will inhibit tracking of meaningful reductions of methane emissions over time and will prevent us achieving climate targets.

The animal agriculture sector is leading the campaign for the adoption of GWP*. The Committee should view the advancement of GWP* through a political/economic as well as a scientific lens, as it benefits the agricultural sector at the expense of achieving meaningful reductions in methane emissions.

UK methane emissions and sectors (Question 12, Question 13, Question 15)

12. What progress has the UK made on reducing methane emissions and where is there room for improvement?

As highlighted above, the UK Climate Change Committee has analysed progress on reducing methane emissions and called UK progress 'weak' and 'insufficient', and said that the UK is unlikely to reach targets with its current plans. The UK Climate Change Committee has urged the government to focus on demand-side changes including promoting dietary change to lower-carbon (and lower methane) diets (reduction in meat and dairy).

13. Which sectors are most promising for achieving further methane emissions reductions?

The most promising sector to achieve methane emission reductions is agriculture. Policies aimed at reducing methane emissions from animal agriculture also have significant associated co-benefits, including:

Reduction of other GHG emissions: animal agriculture is a major producer of GHG emissions, equivalent to 14.5% of global emissions. Meat production in particular plays a disproportionate role as animal farming, as well as livestock feed, is responsible for 57% of all food production emissions. In addition, nitrogen fertiliser used for cattle grazing causes the release of carbon dioxide and nitrous oxide. The latter gas is very potent and is also emitted by stored manure. Reduction in meat production would therefore help cut other harmful GHGs.

Public Health: there is a body of evidence that shows a clear link between high intake of red and processed meats and a higher risk for heart disease, certain types of cancer, diabetes, and premature death. Reducing overconsumption of red meat should be a priority from a public health perspective and can lead to significant reduction in public spending on health.

Sustainable land use: globally, about 80% of agricultural land is used to raise animals or the crops to feed them, although livestock produces less than 20% of the world's supply of calories. It takes around 100 times more land to produce a kilocalorie of beef or lamb than plant-based alternatives, just like it takes almost 100 times more land to produce a gram of protein from beef or lamb than peas or tofu.

Ground-breaking studies (Eat-Lancet Report 2019, Potsdam Institute for Climate Impact Research 2024) have demonstrated that it would be possible to feed

everyone in the world a nutritious diet on existing croplands if we saw a widespread shift towards plant-based diets.

15. To what extent is there existing regulation in each emitting sector to mitigate methane emissions and how well is this working?

Regulation is a powerful tool for the UK to achieve positive methane emissions reduction outcomes. However, there is currently a lack of regulation for the animal agriculture industry to report emissions and commit to contributing to reductions.

The UK government should demand meat and dairy companies set science-based climate targets, which include scope 3 emissions, and action plans to meet these targets. Such action plans should include concrete measures to reduce absolute emissions and specific methane emissions mitigation measures, alongside robust reporting.

Agriculture (Question 16, Question 18, Question 20)

16. Are there emerging technologies such as methane suppressant feed product or approaches to slurry management that could aid with methane emission reduction in agriculture? What impact could they deliver?

This submission argues that such technological fixes fail to address the problem of reducing methane emissions. The reason for this is two-fold:

a) Mitigation policies that rely on trying to improve the methods used to farm animals (technological fixes), rather than reducing the number of animals farmed, will have only a limited impact, due to the biophysics associated with meat and dairy production.

Poore and Nemecek (2018) found that the impacts of the lowest-impact animal products, such as pork, 'exceed average impacts of substitutive vegetable proteins across GHG emissions, eutrophication, acidification and land use' (p990).

There are biophysical reasons for this which cannot be significantly addressed by technological fixes, including: (1) feed to edible protein conversion ratios are greater for animals; (2) deforestation for agriculture is dominated (67%) by feed for animals (soy, maize) resulting in losses of carbon; (3) animals create additional emissions from enteric fermentation, manure and aqua-culture ponds; (4) emissions from processing (especially slaughterhouse effluent) is greater than processing emissions from most other products; and (5) wastage is

high for fresh animal products which are prone to spoilage (p991). As some have said, 'it's the cow, not the how'.

b) Many of the technological solutions are not proven or are not currently available, which contravenes the precautionary principle within the Paris Agreement:

- *Feed quality, additives, and supplements:* methane reducing additives and supplements are designed to inhibit the bacteria in the rumen so as to reduce enteric methane emissions. However, these are in **early stages of their development** and **their effectiveness has yet to be proven.**
- *Animal health and husbandry:* this includes selective breeding, increased use of veterinary services and proactive herd planning. However, **access and costs vary, and thus are not viable for all farming practices.**
- *Improving manure management:* anaerobic digesters (manure converted to gas) are championed by the animal agriculture industry but there are **still significant barriers** including economic, institutional, and technical, and transporting biogas production is **expensive and complicated.** Digesters that are not carefully maintained can also leak, explode, or break down.

Any solution which is not available now contravenes the precautionary principle within the Paris Agreement, which states that 'parties should take precautionary measures to anticipate, prevent or minimise the causes of climate change and mitigate its adverse effects' (Harwatt, 2020, p6).

Dietary change – changing what food we eat rather than how it is produced – is therefore a far more effective solution and can deliver methane emission reductions on a scale not achievable by changing production methods.

18. What other policy tools, frameworks or incentives could be employed in agriculture to drive methane reduction?

Policy solutions to reduce absolute methane emissions from the livestock sector include the following and must be included in UK methane emission plans in the future:

- I. *Reduction of animal herd size in the UK:* reducing the number of animals is one of the most significant solutions to reduce absolute emissions from the livestock sector and will release land required for carbon sequestration

measures. The Netherlands and Germany have both adopted a reduction in herd size as a means of reducing methane emissions.

- II. *Investment in plant-based production systems*: the development of alternative proteins for humans is cited by the UK Climate Change Committee as a proposal that could deliver future unquantified emissions savings: 'Developing a market for alternative proteins requires addressing a range of barriers regarding investment, technology readiness, safety, consumer acceptability and regulatory. Policy is needed to encourage shifts to healthier, sustainable diets' (p257).
- III. *Change consumption patterns (away from meat and dairy towards plant-based diets)*: the UK government has shied away from decisive policies to reduce meat and dairy. If governments reframe the issue and convey the climate, environmental and public health benefits arising from dietary change, this will create political consensus to support interventions. Considering the urgency of the climate emergency, and the positive co-benefits of reducing methane emissions through reduced demand for meat and dairy, decisive policies must be considered to support dietary change at scale.

Below are five recommendations focusing on policy levers to change diets and divert production towards climate friendly food:

- Recommendation one: *public education campaigns*. Public education is a necessary first step in any wider strategy to reduce meat and dairy consumption. Public education messages need to be simple, meaningful and impactful about the need for dietary change. They need to focus not only on environmental impact but also on the co-benefits on health and nutrition of reducing red meat.
- Recommendation two: *fiscal measures*. Taxing red meat would help to incorporate the cost of environmental and health externalities. Government already taxes harmful food products such as sugar, alcohol, and tobacco, which has been an effective and proven way of changing consumer behaviour. A red meat tax would provide increased revenue to fund public health. Taxing red meat would prevent disease, improve public health, and increase public revenue.
- Recommendation three: *label red meat and dairy to reflect environmental impact*. Mandatory labels on red meat and dairy should make explicit its environmental impact. Consumers require information to make informed choices at point of sale. Currently there is information on food products regarding sugar, salt and fat, which consumers use for guidance.

Information on the environmental impact of food could underpin more sustainable policy choices regarding how much to tax and what to subsidise. For consumers, this would enable them to make informed choices based on cost savings as well as environmental impact.

- Recommendation four: *dietary guidelines to reflect scientific evidence and government targets*. National dietary guidelines have been identified as a powerful policy tool in changing production decisions and consumption behaviours, and must reflect nutrition, health and environmental targets. National guidelines must integrate current scientific evidence relating to meat and dairy's environmental and health impact and cohere and align with nutritional goals and internationally agreed climate change targets. Guidelines must include limits on red meat and dairy consumption and provide examples of alternative, sustainable plant-based options.
- Recommendation five: *reduce demand for meat and dairy through public procurement choices*. The government should use its purchasing power and reach, via procurement choices within public services (schools, hospitals, prisons), to reduce demand and change dietary choices. It should facilitate sustainable and healthy eating within the public realm by increasing provision of plant-based protein.

Reducing meat and dairy consumption will require government departments to work together to ensure policy coherence across agriculture, education, health and environment.

20. How can efforts to reduce methane reduction be balanced against other important considerations in the agricultural sector, including food security?

Following the measures outlined above to reduce production and consumption of meat and dairy will have the important side-effect of freeing up a large amount of land currently devoted to animal agriculture. Some of this land will be unsuitable for arable agriculture but can be repurposed to promote biodiversity or to sequester carbon. But land currently used to grow feed to support the existing animal agriculture industry may be suitable for converting to production of plant-based protein for human consumption. Some estimates suggest that as much as 40% of arable land in the UK is used to grow feed for livestock. In other words, the measures recommended in this submission need have no negative impact on food security, and in fact could result in higher domestic food production.