Written evidence Professor Emeritus Ian Plewis (MET0002)

Introduction

I am a retired Professor of Social Statistics (University of Manchester) and have been studying the evidence from official statistics on emissions, agriculture and farming and the links between them.

1. Comments on questions 2 and 12.

The Global Methane Pledge was one of the most important outcomes of COP26. It is specific, measurable, relevant and time bound. Whether the UK can *achieve* a reduction of 30% from the 2020 level by 2030 is doubtful given that methane levels fell by just 2% between 2020 and 2022 and so must now fall by 29% between 2022 and 2030. Agriculture accounts for about half of all the UK's methane emissions and this proportion has increased steadily since 1990. Levels of methane emissions from agriculture have hardly changed this century. Nearly all methane emissions from agriculture are generated by burping livestock (82%) and livestock waste management (13%). It is, therefore, difficult to see how the UK can meet the Global Methane Pledge without reducing ruminant livestock numbers. Modelling by Plewis (2022) indicates that, even with technological improvements (breeding, feed additives etc), the dairy and beef herd would need to be reduced by 20% and the sheep flock by one third. The Climate Change Committee makes similar arguments. Between 2020 and 2023 the beef herd fell by 7% but there were no discernible decreases for dairy and sheep. This reinforces the scepticism about

whether current policies (or their absence) will enable the UK to meet the Global Methane Pledge.

2. Comment on question 11.

GWP100 is used by the Intergovernmental Panel on Climate Change (IPCC) in order to generate a single metric for all greenhouse gases. For methane, GWP100 has increased from 21 in 1995 to 28 currently as scientific knowledge has improved. It is essentially an average over a hundred-year period. Methane, however, is a relatively short-lived gas and this is recognised by GWP* which weights its warming potential highly in the first decade after emission but much less thereafter. Both measures have scientific value. The existence of two (or more) measures can, however, lead to confusion. It can also lead to pressure groups cherry-picking the measure most advantageous to their interests. This has been demonstrated by the large meat and dairy companies, and farmers' organisations, who have used GWP* inappropriately to claim that agriculture's methane emissions are not important and do not need to be addressed.

3. Comment on question 16.

There is good evidence from trials that methane emissions can be reduced with feed additives such as 3-NOP. The UK government appears to be banking on these additives to reduce methane emissions. However, they have not been tested at scale, appear only to be useful for cows, mostly dairy cows housed indoors, and unsuitable for sheep. Moreover, there is no evidence that farmers will be prepared to use them, what price they would be willing to pay and whether consumers will find them acceptable.

There is a great need for rigorous investigation of these matters by DEFRA, possibly via the Farm Practices Survey or other bespoke enquiries.

4. Comment on question 17

It is not easy to gauge the effectiveness of current policies for driving down agricultural methane reductions. Some data are collected in the Farm Practices Survey for England but trends in the use of, for example, slurry covers are difficult to estimate. We do know that the use of anaerobic digesters to process livestock waste is slowly increasing but from a very low base in 2015. And the fact that agriculture is the responsibility of each of the devolved UK administrations means that we have some data on farmer practices and attitudes for England but none for the three smaller countries. Scotland, Wales and Northern Ireland account for 16% of the UK population but 45% of the UK's methane emissions from agriculture. Some of the new agricultural policies introduced under the Environmental Land Management schemes (ELMS) might have an effect on emissions in England but it is not clear how DEFRA intends to evaluate these policies and whether data from the Rural Payments Agency will be adequate. More generally, there are gaps in the evidence required properly to monitor mitigating practices to reduce all agricultural emissions and to evaluate policies.

Reference

Plewis, I. (2022) The UK urgently needs to cut its methane emissions by 2030: cows and sheep hold the key to success. *The Conversation*, 5 July 2022.