Written evidence from Feedback Global (MET0031)

This evidence is submitted by Feedback Global. Feedback Global is a UK-based environmental campaign group working for food that is good for the planet and its people. We are submitting evidence to this inquiry because of our expertise in food systems.

Data, measurement and monitoring

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

Feedback strongly advises against the adoption of GWP* as a climate metric – and instead recommends maintaining GWP100 and GWP20 as the appropriate metrics. Adoption of GWP* would:

- Severely damage international efforts to restrict global methane emissions from the livestock sector.
- Severely compromise efforts to reduce global CO_2 emissions in other sectors by allowing potential for livestock companies to sell misleading offsets for minor methane reductions.
- Allow livestock companies to greenwash themselves as "carbon neutral" or "carbon negative" whilst continuing to cause large amounts of emissions.
- Unjustly reward historically high methane-emitters (at country and company level) whilst heavily penalising countries in the Global South for comparatively low methane emissions.

Firstly, it is important to examine the differences between GWP* and well-established metrics such as GWP20 and GWP100, which are widely used by the IPCC, scientific institutions and in Nationally Determined Contributions towards the Paris agreement. All these metrics measure the Global Warming Potential (GWP) of greenhouse gases in CO_2 equivalent, but in different ways:

- **GWP20** and **GWP100:** Measure the ***total*** global warming potential of greenhouse gas emissions on average over a 20-year and 100-year period respectively, *compared to an alternative scenario/baseline where these emissions are not emitted.*
- **GWP*:** More narrowly measures ***changes*** in the global warming potential of greenhouse gas emissions *compared to a chosen historical baseline year* – in practice, this means *compared to an alternative scenario where a country or companies' emissions continue to have the same warming impact as in the baseline year*. In other words, GWP* treats a consistent unchanging warming impact as neutral, even if this warming impact is considerable, and measures increases and decreases in warming impact relative to this.

GWP* is a deeply flawed approach because what matters in assessing the contribution of a country or company to global warming is not the *change* in its

warming impact (as GWP* measures), but the *total* warming impact of greenhouse gases it emits into the atmosphere – *including emissions which are replaced in the atmosphere*, which exert a continued upward pressure on global temperatures. Put another way, as a recent peer-reviewed article said, an effective climate metric should answer the question "If I emit this ton of substance X, how much more or less warming do I cause compared to a world in which I had not emitted anything?" – GWP* fails to do this[1], because it measures the global warming potential of emissions compared to a baseline where emissions continue to have the same warming impact, rather than compared to a scenario where emissions no longer occur.

Adoption of GWP* lets historical methane emitters continue polluting, in contradiction with the polluter pays principle

GWP* effectively erases the historical methane emissions of companies through use of a historical baseline, and allows them to be offset against continued methane emissions, giving the biggest polluters license to continue polluting – even rewarding them for minor reductions – and allowing them to offset CO_2 emissions for themselves and others.

This is because GWP* assigns a Global Warming Potential of *zero* to a company's methane emissions if they have the same continued warming impact as the company's historical methane emissions – if the warming impact doesn't *change*. This is nearly, but not quite, the same as the company having constant methane emissions (partly because when methane breaks down it leaves some CO_2) – to keep the warming impact of its methane constant, a company needs to reduce methane emissions very slightly, by just under 0.3% per year[2]. Some livestock industry advocates have called this "climate neutrality"[3], but this ignores the continued *total* warming impact of ongoing emissions.

An appropriate climate metric needs to value *continued* harm as important – in this case, a company actively taking a decision to continue a polluting activity which replaces methane it emitted in the past with new emissions, thus creating a continued upward pressure on global temperatures. To use an analogy: imagine a company is pumping sewage into a river at the rate of 10 units per day, and the river takes one day to wash away any sewage. If the company continues to make the active choice to pump out 10 units of sewage every day, then the *total* amount of sewage in the river would remain constant at 10 units, but the *change* in sewage would be 0 units. To regulate this system effectively and fairly in line with the polluter pays principle, the sewage company should clearly be penalised for the continued harm of the total 10 units of sewage – because it is actively choosing to replace pollution in the river every day. But under a GWP* style metric, it would be treated as "sewage neutral" because the amount of pollution in the river as a result of its activities is not changing. An effective metric would measure its impact compared to a scenario in which it stopped polluting altogether.

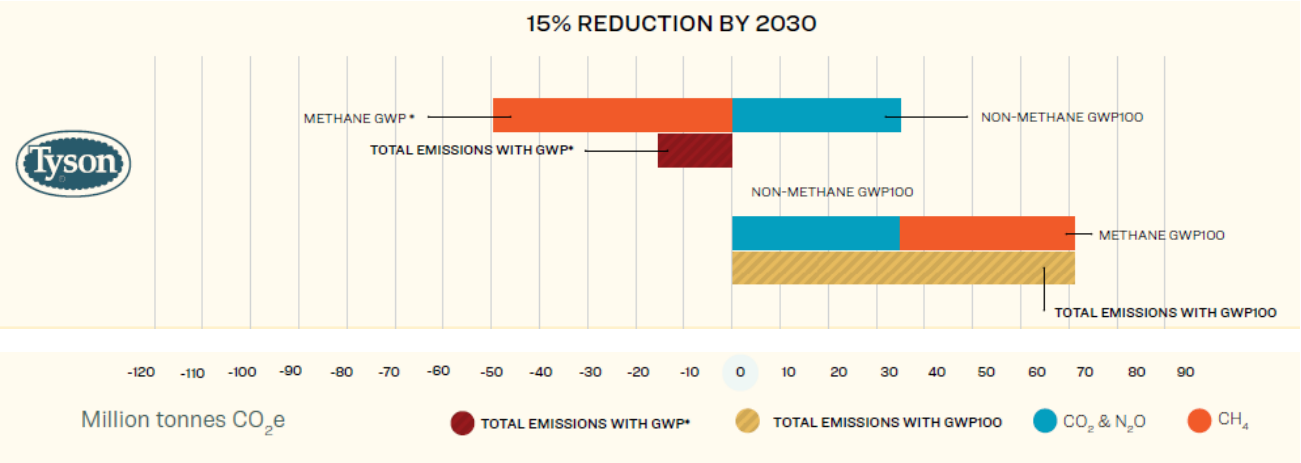
GWP* performs a similar function for methane emissions – declaring reductions of just under 0.3% per year[4] "climate neutral", because this means the warming

impact of the company's methane emissions is ongoing but does not change – even through in reality, the methane is being replaced and doing continued harm.

Adoption of GWP* rewards polluters for minor methane reductions, and helps CO_2 emitters continue polluting through carbon offsetting

Under GWP*, any reductions in methane greater than the roughly 0.3% per year required to meet "climate neutrality"[5] result in a company appearing to have a net-cooling impact on climate change – but this is highly misleading, as this is only a *change* in warming impact *compared to their historical impact*. Returning to the sewage analogy, if the company pumped out 8 units of sewage compared to 10 units previously, the *total* sewage in the river would become 8 units, but the *change* in sewage would be -2 units. Under a GWP* style metric, the company would be considered to be "sewage negative" and rewarded for its -2 change in sewage impacts, but in reality, it is continuing to pump out 8 units of sewage per day – replacing 8 units of sewage in the river, causing continued harm.

If a livestock company claims that changes in its methane emissions have a net-cooling impact via the GWP* metric, it can then use these "negative" emissions to offset its own CO_2 emissions (often referred to as insetting). The graph below[6] shows an example of how a small 15% reduction in livestock corporation Tyson Foods' methane emissions would be reported under GWP100 and GWP*. The higher bars show that GWP* only registers the cooling effect of Tyson reducing its methane emissions by 15% compared to its historical methane emissions (only measuring *change*) - and uses this to offset Tyson's remaining CO_2 emissions, so that on average Tyson appears to have a net-cooling impact across all emissions. But in reality, what the GWP* metric conceals is that Tyson's CO_2 emissions continue exactly the same, and the warming impact of its *total* methane emissions is still 85% of what it was previously – shown more accurately in the GWP100 bars at the bottom:



Source: Changing Markets[7]

Using GWP* would thus allow livestock corporations to falsely claim to have a net-cooling impact on climate change – allowing them to greenwash their environmental impact – whilst also giving them the option of selling carbon offsets to other companies – including fossil fuel companies. GWP* could also therefore significantly harm the fight against fossil fuel emissions, by providing false offsets.

Through methods like those shown above, Frank Mitloehner of the livestock industry-funded CLEAR Center makes explicit that "climate neutrality" for the US beef and dairy industry under GWP* requires only an 18-32% reduction in beef and dairy herd methane emissions by 2050[8] (which under GWP* would offset the industry's sizeable CO_2 emissions from land use change, feed production and manure too) - with particularly limited action in the immediate term, only 0.5-1% decreases per year in methane between 2020-30[9]. This distorting metric would thus enable the US cattle and dairy industry to continue emitting 68-82% of its current methane emissions by 2050, plus all of its current CO_2 emissions, and misleadingly claim to be climate neutral – readily achievable through only minor changes such as the use of feed additives and manure management. For any methane reductions beyond this, the industry could claim to be carbon negative, and sell offsets to other industries. As a result, the president of the US National Cattlemen's Beef Association recently said at a meat industry conference that it was "going to be pretty easy to" become climate neutral by 2040 "without reducing the number of cattle" – and GWP* "would speed up the ability to meet this part of the goal that we have in carbon neutral by 2040."[10]

For high methane-emitting countries, the perverse impacts of GWP* are even more dangerous. Michelle Cain, one of the academics who developed GWP*, argues that if New Zealand's farmers cut methane by just 24% by 2050, then this "would offset the warming impact of all the other emissions" such that "New Zealand could declare itself climate neutral almost immediately, well before 2050, and only because farmers were reducing their methane emissions", saying "that's a free pass to all the other sectors, courtesy of New Zealand's farmers." [11] This "free pass" would in reality enable New Zealand's livestock sector to continue emitting 76% of its current methane *and* all other economic sectors in New Zealand (such as energy, heating, and transport) to continue emitting 100% of current levels of CO_2 – but claim to be climate neutral, on the basis of false emissions offsetting under the GWP* metric. It is perhaps not surprising, then, that the New Zealand (and UK) livestock industries have strongly lobbied for GWP*[12]. The effect would be less pronounced for other rich countries, because ruminant livestock make up an unusually high 43.3% of New Zealand's total emissions[13] – but the greenwashing effects would still be extremely damaging to global and UK efforts to tackle climate change.

Adoption of GWP* would be extremely inequitable – heavily penalising countries in the Global South

Most principles of climate justice recognise that countries causing the largest emissions – particularly those with high historical emissions – should carry the

largest responsibility to cut emissions deeper and more quickly, leaving lower-income countries some space to increase their emissions a little in the shorter-term to help with international equity and development, before eventually converging on a lower level of emissions globally. This is equally important for emissions related to food and agriculture. GWP* incentivises precisely the opposite of this.

We have already examined how GWP* removes accountability for historically high-emitting countries and companies for huge ongoing emissions of methane, actively rewards them for even small methane reductions, and helps them offset large volumes of CO_2. The flipside of this is that GWP* disproportionately penalises countries or companies which have emitted no or little methane before. This is because it only assigns high global warming impacts to *increases* in methane emissions. GWP100 and GWP20 already measure changes in methane emissions, but more usefully as part of broader total emissions. GWP* only punishes new or extra methane emissions – assigning it a 16x larger global warming impact per tonne of methane emitted than an established source (more than 20 years old)[14].

Returning to the sewage analogy, recall that if a company pumped out 8 units of sewage compared to 10 units previously, the *total* sewage in the river would become 8 units, but the *change* in sewage would be -2 units. If another group originally pumped out 1 unit of sewage compared to 0 units previously, the change in sewage would be +1 units. Under a GWP* style metric, the company which is still causing 8 units of sewage would be rewarded as "sewage negative" from its -2 reduction, whilst the group which is only pumping out 2 units of sewage would be disproportionately punished for its +1 addition. Similarly, whilst GWP* would allow a free pass or actively reward a large multinational livestock corporation like JBS, which is estimated to cause as many greenhouse gas emissions as Spain[15], GWP* would heavily punish small-scale livestock farmers in the Global South if they increase the size of their cattle herd.

This is why Dr Joeri Rogelj, director of research at the Grantham Institute at the London School of Economics, has said that whilst GWP* rewards high-income countries, "countries in the south that are gently increasing their national emissions for development would be severely penalised" and "using GWP* as suggested by some industries today can therefore go directly against the idea of climate justice or international fairness." [16]

Other impracticalities of GWP*

GWP100 is embedded in the Paris Climate Agreement and countries' Nationally Determined Contributions[17]. Changing to a radically different metric would require renegotiation of global climate agreements, NDCs and other mechanisms like emission trading systems to accommodate this – which is completely impractical, and as noted above would have profoundly damaging consequences. Furthermore, depending on the choice of baseline year for GWP*, the same volume of methane emissions can be described as causing warming, no warming or even cooling[18]. This leaves significant potential for countries and companies to

abuse this through selective choice of baseline year. The baseline for comparison used by GWP100 and GWP20 – that is, a scenario where the country or company no longer emits a given greenhouse gas – is a far more reliable and appropriate baseline.

Agriculture

16) Are there emerging technologies, such as methane suppressant feed products or approaches to slurry management, that could aid with methane emissions reduction in agriculture? What impact could they deliver?

There are significant limitations to the methane reductions possible from feed additives – particularly in comparison to reducing livestock numbers. Most feed additives for cattle have not yet been tested in real-life settings at scale, and rolling out feed additives across the whole sector would be an extremely complex task. Moreover, feed additives are difficult to administer regularly in pastures where most cattle spend the majority of their lives (and emit the majority of their methane) – the National Food Strategy concluded that: "There are drawbacks associated with methane reduction technologies, and limits to how they can be used. Food additives need to be given regularly, which means they aren't suitable for cows that spend most of their days in fields. We estimate that the methane reduction techniques currently in development could cut farming emissions by around 10%."[19]. Changing Markets have estimated that changes in feed and additives would result at most in a 1-12% reduction in EU methane emissions from livestock[20]. Other experts have argued that it will likely result in only an 8.8% emissions reduction (if successfully rolled out through all feedlot systems for cattle, a significant undertaking)[21].

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

Dietary change has the largest potential to reduce UK methane emissions, and should urgently be integrated into the government's strategy. The government-commissioned National Food Strategy recommended that the UK transition to 30% less meat consumption by 2030[22]. Every Climate Change Committee (CCC) net zero scenario includes dietary change, with the CCC calling it "particularly important"[23]. Over half of the emissions abatement modelled in the CCC's Balanced Net Zero Pathway scenario for the agriculture sector is achieved through "diet change and food waste"[24]. The CCC estimates that a 50% reduction in just the UK's beef, lamb and dairy consumption alone could result in a 37% reduction in total domestic emissions from the UK agricultural sector, saving 17.49 Mt CO_2eq per year[25]. The CCC estimate that a 35% reduction in UK meat consumption would lead to emissions savings of 10 MtCO_2e per year[26] and spare roughly 4.4 million hectares of agricultural land[27], which could sequester considerable extra carbon by restoring forests and nature on this land. Faster reductions would result in even greater savings. A recent peer-reviewed study of UK diets estimated that compared to high-meat diets, low-meat diets have

approximately half the emissions impact (52%), and vegan diets have approximately a quarter of the emissions impact (25%)[28]. A considerable proportion of these emissions savings would come from methane reduction from lower production and consumption of ruminant livestock products – particularly beef and lamb.

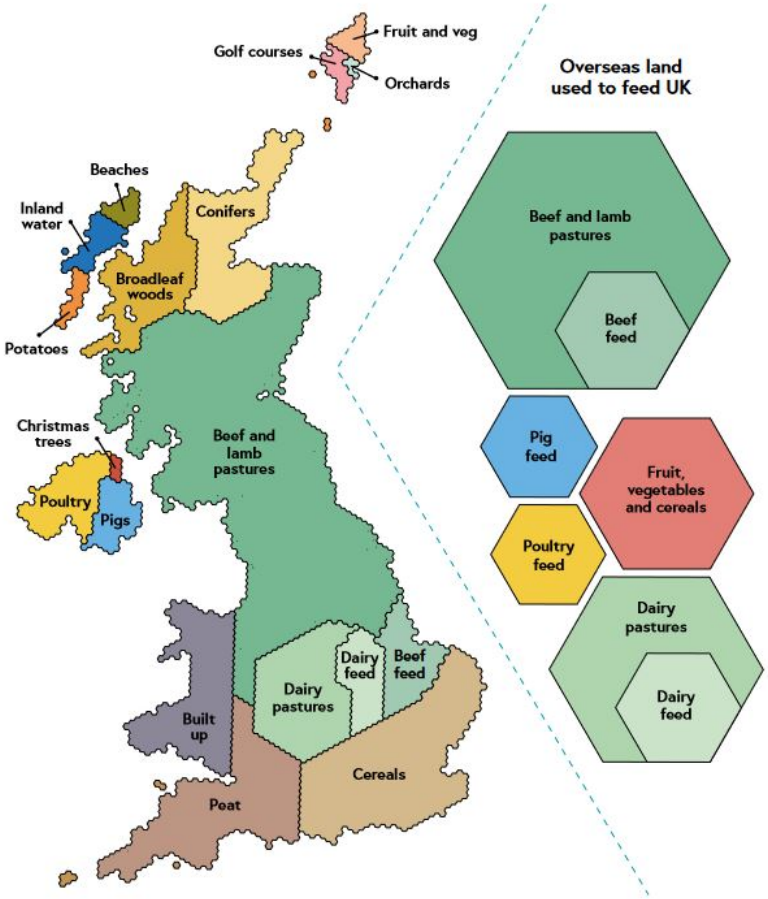
The government already intervenes in the food system in ways which support meat and dairy production and consumption – including subsidies, public procurement, and trade policies. We recommend that the government rebalance incentives like subsidies to support a just transition to lower meat and dairy production and consumption.

19) How can efforts to mitigate methane emissions in agriculture be integrated into broader approaches to facilitate and incentivise climate and nature-friendly farming practices?

As well as being the dominant source of agricultural methane ruminant livestock is the biggest driver in the UK of competition with nature restoration. The UK currently has an estimated 8.4 million hectares of permanent pastureland domestically[29]. This land has considerable potential for nature restoration – for instance, temperate rainforests used to cover most of the west coasts of Britain – but today fragments of temperate rainforest cover less than 1% of Britain[30]. There is potential for up to 20% of Britain to be restored as temperate rainforest[31], mainly in Scotland, Wales, and Cumbria and Cornwall in England[32]. A considerable area of these suitable regions are currently used as pasture[33]. Focusing reductions in ruminant numbers in these regions would therefore offer the twin benefit of methane reduction and freeing land for temperate rainforest restoration.

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

A just transition to lower meat and dairy production and consumption is positive for both emissions reduction and food security. 85% of the UK's total agricultural land footprint (domestic and overseas) is associated with meat and dairy production, but only 48% of its total protein and 32% of the UK's total calorie consumption derive from livestock products[34]. An estimated 55% of the UK's 5.8 million hectares of cropland is currently used to grow animal feed[35], causing considerable food-feed competition for land. This valuable cropland could be used to significantly scale up UK food security. 55% of the UK's domestic agricultural emissions are from enteric fermentation – i.e. methane from the burps and farts of ruminant livestock like cattle and sheep[36] - which also use a considerable amount of UK cropland for dairy and beef feed, as shown in the diagram below from the National Food Strategy[37]:



Waste and waste management

21) What further progress could be made in the waste and waste management sector on reducing methane emissions? Are there interventions and/or technologies that could bring emissions down?

Feedback recommends that increasing landfill taxes or a ban on food waste to landfill would be valuable tools to disincentivise food waste going to landfill and emitting methane – though this should also be complemented with taxes on incineration to ensure that food waste as a minimum goes to anaerobic digestion or composting. For instance, the Netherlands has a tax on waste sent to both incineration and landfill[38]. Bans on incineration and landfill should also be considered. For instance, in 2022 Scotland introduced a moratorium on the building of new waste-to-energy incinerators[39]. These policies would complement mandatory separate food waste collections, because the higher costs of general waste disposal would provide an incentive for businesses to sort and separate their food waste into the appropriate bin.

Greater focus on food waste prevention would also be constructive, to further help reduce food waste decaying in landfill. Feedback recommends that mandatory food waste reporting be introduced without further delay, and that the government increases funding to food waste prevention – prioritising funding for this over lower stages in the food waste hierarchy such as anaerobic digestion subsidies or food waste redistribution.

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