Submission AGR 00842-19: Increasing Climate Ambition

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STATUS:	Review	OWNER:	eSub Ministers Office
PURPOSE:	For Information	REVIEWERS:	Love, Edwina Callanan, Bill Smith, Ann
DIVISION:	Climate Change and Bioenergy Policy		
DECISION BY:			

Action required

For information/noting (1) Update on consultation re Ag-climatise (2+3) Proposed increased ambition for Europe under Cion 'green deal' and consequent increased pressure to reduce emissions further.

Executive summary

1. The **Ag-Climatise Consultation** will end on 10 January. There has been a good response interactions with industry have also taken place. Despite a strong understanding of the pressures on the sector, there remains a reluctance to take responsibility to deliver the actions necessary. A workshop is being held on 22 January to discuss consultation outcomes. A focus will be that if an action cannot be delivered, an alternative must be identified or other options proposed.

2. The Cion launched the **European Green Deal** on 11 December with the ambition to make Europe the first carbon-neutral continent by 2050. Pressure is now mounting to increase Europe's 2030 emissions targets and Member States (DCCAE lead)are required to submit their Long Term Strategy to contain a thirty year perspective. These submissions are intended to generate increased ambition in reducing emissions and will see a step-up in national commitment, the extent of which is undecided as yet.

3. Total emissions from agriculture are required to be 17.5 - 19 MtCO2e in 2030. With all known mitigation options on the table and an assumption that increasing dairy cow numbers are being offset by reductions in the national sucker herd, we expect to be at the upper end of that range. In the event that we need to deliver closer to 17.5 MT (or lower) as part of contribution to Green deal, increasingly innovative options (feed additives, alternative land use strategies) and a review of total herd size will be necessary.

Detailed information

Ag-Climatise Strategy

Context:

The agricultural sector needs to respond and play its part in the transition to a low carbon, climate resilient economy and society for the future, while also taking advantage of the market opportunities by being in a leadership position. It is not an understatement to say that the success with which the sector does this will determine its future viability.

In order to respond to the challenge in a coherent and coordinated manner, and bearing in mind the All of Government Climate Action Plan 2019 to Tackle Climate Breakdown, and the Report of the Joint Committee on Climate Action, we are proposing a roadmap for the sector to ensure the future development of the agriculture and land-use (including forestry) sector will be built on environmental sustainability including climate resilience, and contribute fairly to Ireland's climate, air and energy targets. This draft roadmap is composed of three elements:

Implementing Changes Now: to ensure the actions necessary to protect the environment and address climate change are carried through to operational reality for farmers on the ground now;

Acting in Partnership: To succeed in the effort outlined in this roadmap, all stakeholders right along the food chain, from farm to fork, will have to contribute in a spirit of partnership.

Preparing for the Future: using best available science to inform policy development and to help stakeholders make strategic choices about the future;

The role of the Department of Agriculture, Food and the Marine and its agencies is to develop and implement policy to guide the development of the agriculture and land-use sector. This DRAFT roadmap articulates a direction of travel for the sector, and aims to guide the future transformation of the sector to support Ireland's climate and energy obligations in the context of 2030 and beyond.

Current Position:

The consultation process was launched on 17 November and will end on Friday 10 January 2020. Responses are invited either in written format or via SurveyMonkey.

The Department will run an **AgClimatise workshop** on 22 January in the Mount Wolesley Hotel in Carlow with support from Teagasc and Bord Bia. Our general sense is that the challenge is clearly understood but there remains a lack of acceptance of responsibility to implement the actions assigned to the sector by key stakeholders. The purpose of the workshop is to try to break the logjam. Our objective is to end the day with a clear commitment to action (or pledges) from the various players.

The workshop will be invite only and target industry, rep organisations and farmers. A **separate** workshop is being planned with the Environmental Lobby for mid February.

Long Term Climate Strategy for 2050

Context:

On 17 June 2019, the Government published the Climate Action Plan 2019, which commits to bring forward a new Climate Action (Amendment) Bill for publication in Q1 2020. The Climate Action Plan indicates the new Bill will enshrine in law a national emissions target for 2050 and also commits to evaluate the changes required to adopt net zero policy in Ireland as part of finalising the national Long Term Strategy.

In addition, under the EU Governance Regulation, Member States are required to submit their Long Term Strategy (LTS) by the end of 2019 which will contain a thirty year perspective. Ireland's Long-term Strategy is currently subject to period of public consultation which closes in December. The final decision for Ireland's 2050 target will be informed by this consultation process and research currently being undertaken to inform the target.

Further, on 11 December 2019, the **European Green Deal** was published as the Commission's new growth strategy. It includes a roadmap with clear steps that will drive forward an ambitious work programme for the next five years for Europe to become climate-neutral by 2050, protect human life, animals and plants by cutting pollution, help companies become world leaders in clean products and technologies and help ensure a just and inclusive transition. In this context, Ireland's submission in respect of the Long Term Strategy will take on additional importance.

Current Position:

The current policy position reflects an 80% reduction in CO2eq emissions by 2050 compared to 1990 levels for the electricity generation, built environment and transport sectors; in parallel to an approach to carbon neutrality in the agriculture and land-use sector, including forestry, which does not compromise on national capacity for sustainable food production.

The development of submission to EU on Ireland's Long Term Strategy by year end is intended to generate increased ambition across the EU in its commitment to reducing emissions by 2050 and will see a step-up in national commitment, the extent of which is undecided at this stage.

There are three proposed national positions under consideration:

i. Retain current National Policy Position: 80% reduction in energy related CO2 by 2050 and an approach to carbon neutrality in the agriculture and land use sector
ii. Net zero GHG emissions and targeted reductions for biogenic methane: Reducing net greenhouse gas emissions to zero by 2050 and deep reductions in biogenic methane in line with the IPCC's 1.5 degree pathways.
iii. Net zero for all GHG emissions: Net zero emissions across all greenhouse gases by 2050 in line with the IPCC's 1.5 degree pathways.

McKinsey Consultants have been engaged by DCCAE to conduct modelling work on the above scenarios and therefore inform the final government position. Initial discussions with McKinsey suggest that the proposed position No. 2 appears to be main thrust of likely recommendation and a possible 60% reduction target for methane is at least being considered.

Policy Impact:

As Option 1 of retaining current position is highly unlikely, DAFM have identified the need to maintain separate approach to methane as per Option 2 above as it most closely reflects the current policy position of an approach to carbon neutrality which

doesn't compromise sustainable food production and also allows for a different reduction trajectory for methane compared to zero CO2 emissions.

However, a 60% target reduction in biogenic methane would certainly be impactful: in the absence of radical technology evolution such as in the area of feed additives, there is no confidence that this scale of reduction could be delivered.

In terms of international commitments, recent developments in New Zealand are a benchmark and they have set a 10% reduction target for methane by 2030 and 25-47% range for 2050.

Reducing Methane and Alternative Land Use Options

Context:

In most countries, GHG emissions come mainly from the release of CO2 to the atmosphere and so the need to reduce levels of CO2 rather than methane has been driving international actions to cut carbon emissions. While CO2 and N2O are active in our atmosphere for many generations, methane – a powerful, but short-lived, greenhouse gas – is broken down in about a decade. This means that the methane emissions of a herd of 100 cows today are simply replacing the emissions that were first produced when that herd was established by a previous generation of farmers. There was an initial pulse of warming when the herd was established, but there is no ongoing warming from that herd.

In Ireland, enteric fermentation was responsible for 56% of total Irish agricultural emissions in 2018 of which methane is a by-product. New Zealand is the first country to include a separate plan for methane in their zero-carbon legislation (targeting a reduction of 24-47% from 2017 levels). The lower targets for methane acknowledge the theory that methane global warming potential is overestimated by the Paris Climate Agreement 2015 and reflects that methane stays in the atmosphere for a much shorter period than the main GHG, CO2.

This is a very important precedent for Ireland as both countries have uniquely high shares of emissions from agriculture due to their high livestock numbers, low populations and low industrialisation. It is important to consider the potential of having 2050 ambitions of net-zero GHG emissions that exclude methane, which will have its own individual target, and how methods of reducing these may affect the Irish agriculture industry.

Methods of Reducing Methane

A combination of different CH4 mitigation strategies should be adopted at farm level to substantially decrease methane emissions from ruminants. In order to achieve any specific commitment, there will need to be max abatement from existing measures and the development of additional 'next horizon' technologies that are not yet commercially available. Next horizon technologies and their potential reductions according to McKinsey include;

- **Feed additives -** The active ingredient 3-nitrooxypropanol (3-NOP) disrupts formation of methane in the rumen and significantly reduce emissions. Scientifically proven in 26 peer-reviewed studies. ***~30% potential reduction***
- **Vaccines -** Ruminant methane comes from 3% of microbes in the rumen. Developing a vaccine to prevent the production of methane. ***~30% potential reduction***
- **Direct methane capture -** Indoor AC system collects methane from indoor herds and reused for energy. Collection of manure and conversion into biogas. ***~40% potential reduction***

It is important to note that if these measures were to be implemented to full effect it wouldn't achieve 100% as may be suggested as the abatement is sequential. For example, if feed additives achieved 30% reduction then vaccines can only achieve 30% of the 70% leftover and so on. Also, it is highly unlikely that all farmers would adopt the use of all these measures (maybe ~60%).

Developing more efficient breeding strategies and animals can also help to achieve higher abatement. Breeding animals that utilise feed better and which emit less methane is the aim of a two-year research study of 300 cattle at the Irish Cattle Breeding Federation (ICBF) progeny test centre in Tully, Co Kildare. Feed efficiency and methane production are related; it has been shown that cattle which are more feed-efficient emit less methane. This is one of the reasons why climate mitigation can improve farm profitability and efficiency.

Other Options

The McKinsey analysis also suggests other methods for addressing methane emissions within Ireland. These mainly include developing alternatives to beef production by supporting and incentivising farmers to make the necessary changes;

- *Extensification* – decrease use of inputs (livestock, fertiliser), providing financial incentive from structural redesign of basic farm payment.
- *Agroforestry* – includes hedgerow planting/maintenance. Helps biodiversity, C seq.
- *Forestry* – plant and maintain for building materials, heat/electricity generation, C seq.
- *Bioenergy* – collecting slurry and grass for AD energy production. Energy and fuel crops.
- *Other environmental activities* – additional environmental zones increase biodiversity.
- *Other business diversification* – alternative revenue streams. Hospitality, leisure etc.

Outside of McKinsey's analysis, the feeding of seaweed has been highlighted as another possible measure to reduce methane emissions but there are questions over the longevity and sustainability of these reductions in the longer term. Feeding trials for similarly promising substances in the past have shown that the emissions reducing effects can fade over time. There is also the need for further research to investigate any impacts that feeding seaweed might have on animal performance and health and whether there was any further effect on the products of milk and meat. It would likely require large quantities of seaweed so the collection, drying and processing could be costly.

Comprehensive research is needed to explore proven and reliable CH4 mitigation technologies that would be practically feasible and economically viable while improving ruminant production.

However, a comprehensive review of our current approach, which is based on the principle of a stable herd size (with dairy increases offset but suckler reductions) will be necessary in the event of (a) increased ambitions as a result of increasing national targets by 2030 under EU 'green deal' or(b) the absence of significant scientific advances in methane reducing measures towards delivery of 2050 targets.

Related submissions

There are no related submissions.

User details

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