

## Session SBI59 (2023)

Session starts: 01-09-2023 00:00:00 [GMT+1]

Session ends: 30-11-2023 23:30:00 [GMT+1]



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A compilation of questions to - and answers by - Ireland [exported on 02-12-2023] by the UNFCCC secretariat

Question by Canada at Friday, 29 September 2023

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 30 September

Title: How is atmospheric measurement data considered in your GHG inventory?

Improved measurement technologies in recent years have resulted in the advancement of emissions data derived from atmospheric measurements which can be compared to emissions/removals data reported to the UNFCCC. Could you please share information about how atmospheric measurement data are considered in the development of your GHG inventory, including any plans to incorporate such measurements into inventory methodologies?

Answer by Ireland, Wednesday, 29 November 2023

The national GHG inventory is compiled following the reporting guidelines on annual inventories adopted in 2002. The guidelines describe the scope and reporting of GHG emission inventories by Parties. As detailed in Section 3.2.4 of the 2002 Communication report, very few measured data are available for GHG and, consequently, the emissions are estimated by applying emission factors for each source/gas combination to appropriate activity data for each source.

Ireland does however have extensive GHG observational data from four atmospheric sites, and a range of ship and buoy based ocean measurements. Ireland officially joined the European Integrate Carbon Observation Research Infrastructure in 2023, which ensures that data for Ireland is comparable to similar data across Europe and globally.

To date, atmospheric measurement data have not been used in the compilation of the GHG Inventory. However, we plan to use analysis based on these data for verification purposes in the future.

These data are currently extensively used in national and European funded research projects. Ireland's Environmental Protection Agency (EPA - who compile the greenhouse gas Inventory) funds a range of research at Inventory verification via direct atmospheric measurement in combination with inverse modelling. Examples of this research include the EPA funded IMPLiCIt project by the University of Galway, a project which aims to improve the capability in Ireland to verify emissions. You can find more information on the EPA website here: <https://www.epa.ie/publications/research/climate-change/research-331-implicit-capability-in-ireland.php>.

The EPA (along with other European Inventory compilers) also provided expertise to the EU wide VERIFICATION project (europa.eu).

The EPA is also a partner in the Copernicus CoCO<sub>2</sub> project which aims to build a prototype systems for CO<sub>2</sub> emissions and Verification Support capacity for anthropogenic CO<sub>2</sub> emissions. You can find more information on the project here: <https://coco2-project.eu/>

The Inventory team in the EPA is supporting the University of Galway in its role as a partner on the PAIR project, a Horizon Europe research project (2023-2026).

The project aims to:

1. Quantify top-down emissions of all the major Kyoto protocol gases (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, F-gases) and trace gases (organic carbon (OC), and black carbon (BC)) from Europe.
2. Develop the capability to quantify emissions from specific source sectors through the implementation of advanced measurement technologies and through advances in bottom-up emissions estimation
3. Develop data products relevant to inventory compilers with the aim of integrating measurement-based emissions data into national inventory reports for a selection of countries

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Question by United States of America at Friday, 29 September 2023

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 30 September

Title: Animal Husbandry Research Programme

On pg. 160, Ireland notes that some of the animal husbandry research programme in combination with other farm-level technology efforts (e.g. “effect of increasing outputs and reducing inputs including transfer of information through for example the ‘Signpost’ and ‘Grass’ programmes) are leading to reductions in GHG emissions per unit of output for both milk and meat production”. Can Ireland elaborate on the efficiency improvements and projected impacts?

Answer by Ireland, Wednesday, 29 November 2023

On knowledge transfer the Teagasc (Ireland’s Agricultural Development Authority) Signpost Programme, supported by Ireland’s Department of Agriculture Food and the Marine (DAFM) is working with Irish farmers and a partnership of over 60 partner and supporter organisations across the agri-food sector, to reduce Green House Gas emissions, reduce Ammonia emissions, reduce nutrient losses, enhance biodiversity, and improve the efficiency of food production. A cohort of 100 Signpost demonstration farms is at the centre of the Signpost Programme and cover all mainland-based enterprises. The objective of the Signpost farms will be to employ the emerging new Green House Gas mitigation technologies, such as new breeding programmes and feed additives, and to facilitate the transfer of knowledge from these farms to every farm in Ireland.

With the support of DAFM; Teagasc the Irish Cattle Breeding Federation and Ireland’s Bord Bia are jointly developing a toolkit of tailored farm sustainability support and solutions for Irish farmers called AgNav. From 2024, it is targeted that 10,000 farmers will be utilising the platform each year. The platform will enable an analysis of an individual farms emissions and aid the farmer together with his climate advisor to identify the best measures on climate action and sustainability for implementation on their farm.

In relation to Grass programmes, Teagasc’s Grass10 programme is a good example. The Grass 10 programme aims to promote sustainable grassland excellence on Irish livestock farms (dairy, beef and sheep). The primary objective of the Grass10 Campaign is to utilise 10 tonnes of grass DM/ha/year using 10 grazings per paddock on grassland farms in Ireland. As well as working closely with all partners and the Teagasc advisory programme, the Grass10 programme works closely with the Grassland Science Department in Teagasc.

Ireland’s natural resource of almost four million hectares of grassland, combined with our mild, moist and changeable climate, provides us with a significant comparative advantage over other international milk- and meat producing countries. These twin

advantages allow Irish farmers to grow abundant grass, and produce milk and meat naturally and at low cost.

Despite the established benefits of grass-based milk and meat production, Irish livestock farmers are currently not optimising grass production and utilisation. Indeed, Teagasc research indicates that the current levels of grass grown (and utilised) on dairy, beef and sheep farms can be increased significantly. Closing the gap between current levels of grass utilised and the Grass10 target of 10t DM/ha/year utilised, will support significant increases in milk and meat production. Achieving this will require changes in farm practices associated with both grass production and utilisation, including soil fertility, sward composition, grassland measurement and grazing infrastructure.

It is important to note that bovines grazing good quality grass can increase their levels of production and produce less emissions than animals grazing poor quality swards or grass silage for example. A quality grass-based diet has less roughage than grass silage for example and with less roughage to be broken down in the rumen less emissions are produced.

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**Question by** United States of America at Friday, 29 September 2023

**Category:** Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

**Type:** Before 30 September

**Title:** Tracking impacts of mitigation

Has Ireland made improvements to the inventory to facilitate tracking impacts of mitigation efforts? Has use of EU ETS data facilitated this for some categories? If so, can Ireland elaborate on such examples, including any outside use of the EU ETS?

**Answer by** Ireland, Wednesday, 29 November 2023

The impact of many mitigation efforts such as greater use of biofuels in industry, electricity generation and domestic aviation are captured in the activity data from the EU Emissions Trading Scheme (ETS). Other mitigation efforts in the built environment (residential and public/services), road transport (freight, private car, public transport) and agriculture sectors are captured outside of EU-ETS. For example, Ireland has increased the granularity of activity data that feeds into the emissions calculation for the Agriculture sector, allowing the tracking of usage of fertilisers and feeds that result in lower emissions.

Question by United States of America at Friday, 29 September 2023

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 30 September

Title: LULUCF Emissions

It has been reported that Ireland saw an increase in total GHG emissions including net emissions or removals from LULUCF over 1990-2020 and 2020-2021. Could you discuss the factors and circumstances that led to this increase and if this poses a significant impact to Ireland achieving its climate goals? Additionally, what areas of collaboration could help in mitigating this?

Answer by Ireland, Wednesday, 29 November 2023

The LULUCF sector as a whole is a source of emissions in Ireland. This is in contrast to many parties where the sector is a sink. This is driven historically by the commercial exploitation of peat for energy and horticultural use, along with the drainage of grasslands on peat soils. With respect to 2020-2021 the increase in emissions from the sector is largely driven by reduced removals from forestry. The forest sector is transitioning from a sink to a source of emissions as forests mature and afforestation rates over the last two decades cannot compensate for this. In future years and to meet Ireland's National Climate Objective for 2050, a significant ramp up in afforestation rates will be required in conjunction with enhanced forest management activities and actions to reduce emissions from organic soils.

The Grassland and Wetlands categories drive emissions in the LULUCF sector in Ireland, primarily due to drained grasslands on organic soils and exploited wetlands for peat extraction. To date, this has been offset to a certain extent by Forest land and Harvested Wood Products which have been a significant carbon sink since 1990. However, Ireland's forest sink is in decline due to legacy issues on Forest Land. Plantings from the 1990s are now maturing and ready for harvest. Once harvested they will cease to sequester carbon until they are fully re-established. As a result of the projected trajectory for emissions in the Forest Land sector, the emissions for the overall LULUCF sector are projected to increase to 9.67 MtCO<sub>2</sub>eq. by 2030. This presents challenges for the sector as it widens the gap to target substantially due to the projected increases in emissions in this sector.

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Question by Japan at Friday, 29 September 2023

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 30 September

Title: Sensitivity analysis for projections

Ireland has conducted sensitivity analyses for two sectors: the agriculture sector and the transport sector. Could Ireland explain the reason for limiting the sensitivity analysis to these sectors? Also, does Ireland plan to conduct the sensitivity analysis for total emissions in the future?

[Answer by Ireland](#), Wednesday, 29 November 2023

The Guidelines for the preparation of national communications state ( para. 27) that "*Parties may report a sensitivity analysis for any of the projections, **but should aim to limit the number of scenarios presented***". For this reason, Ireland limited the sensitivity analysis to these high-GHG emitting sectors.

Sensitivity analyses are varied from year to year, for example, in the 2022 Projections Ireland carried out an additional sensitivity analysis of the Commercial and Public Services sector based the projected impact of higher demand growth in energy use in datacentres specifically.

Ireland's approach is to prioritise sensitivity analysis for those sectors that contribute significantly to total emissions and where a variation in key assumptions or parameters (eg. fuel pricing, agricultural output) could result in a substantial increase in those emissions. This allows for greater clarity on the projected cause and effect, which could aid the targeting of a policy response if necessary.

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[Question by New Zealand](#) at Friday, 29 September 2023

[Category](#): All emissions and removals related to its quantified economy-wide emission reduction target

[Type](#): Before 30 September

[Title](#): Ireland's emissions reductions target for the agricultural sector

New Zealand congratulates Ireland for its absolute emissions reduction target for the agricultural sector. Agricultural mitigation will be key to limiting warming to 1.5 degrees. Could Ireland please elaborate on its key opportunities and challenges it will need to address in meeting this target?

[Answer by Ireland](#), Wednesday, 29 November 2023

Emissions reduction in the agriculture sector is particularly challenging because it is a biological system. There will always be residual emissions associated with food

production. Some time is needed to develop the technological and innovative solutions, and also to determine whether the measures are having the desired impact. However, the implementation of measures to mitigate agricultural emissions, such as the use of inhibited urea fertilisers, have valuable co-benefits for other environmental concerns.

Livestock grazing out of doors dominates Irish agriculture and our agriculture sector has a reputation for high quality and sustainably produced food. Maintaining and verifying that reputation is an imperative for our agri-food industries. The agriculture sector is the largest contributor to Ireland's greenhouse gas emissions. While challenging from an Irish perspective, and unusual in an international context, this fact reflects the economic, and historical, importance of agriculture, relative to other industries in the Irish economy. Reducing emissions in agriculture is not a uniquely Irish challenge – throughout Europe, reducing GHG emissions in agriculture has proven difficult. What sets Ireland apart from its EU counterparts is the scale of our beef and dairy primary production industries relative to our population and land size, and the lack of heavy industry in Ireland's economic make-up.

Key to delivery of our climate targets in the agri-sector in Ireland will be the provision of low emission animal feeds and low emission fertilisers. Significant resources are currently employed to advance these technologies to the point that they can be deployed on Irish farms. Low emission animal feed that includes ingredients such as lipids, methane inhibitors, halides (oxidising methane inhibitors) and a lower protein content offer real promise as a sustainability measure. Food and feed safety will always come first with all feed ingredients needing to meet regulatory, safety and necessary research requirements. Incorporation of these technologies and in particular advancement towards a methane inhibitor that can reduce emissions significantly while animals are grazing outdoors will be key to the delivery of absolute emissions reductions.

Nevertheless, it is important to recognise that whilst these technologies offer promise they are still at early stages of research. Policy measures to incentivise their use will also need careful consideration.

Also key to reducing emissions will be the use on Irish farms of low emission fertilisers, with more options and products being currently researched and developed. There is also increasing potential for the use of bio-fertilisers and digestate coming from a developing biomethane industry to replace chemical nitrogen combined with more efficient use of existing animal slurries through achieving our targets for low-emission slurry spreading.

The impact of actions from within this sector can produce opportunities to decarbonise other sectors within the Irish economy for example, feedstock to be grown for biomethane from the agri sector, can generate an alternative income and diversification opportunity in agriculture, will providing for reductions in emissions in the transport and industry sectors as fossil fuels are displaced.

In addition to developing renewable energy streams, the agriculture sector has a key role to play in developing bioeconomy innovation, e.g., bioproducts, biomaterials and biochemicals. Altered practices across land uses, under the correct conditions, can also yield significant co-benefits for ecosystem services including water quality, drought management, flood attenuation and biodiversity.

These interactions underline the importance of the whole-of-Government approach to climate action and the bioeconomy in Ireland.

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Question by New Zealand at Friday, 29 September 2023

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 30 September

Title: Emissions restrictions through sectoral emissions ceilings

In 2022, Ireland implemented a Sectoral Emissions Ceilings policy which would ensure key industries like electricity and transport have a maximum limit on greenhouse gas emissions. Can Ireland share insights into why this sectoral approach was pursued?

Answer by Ireland, Wednesday, 29 November 2023

The introduction and adoption of the Sectoral Emission Ceilings (SECs) in 2022 was required under Section 6c of the Climate Action and Low carbon Development (Amendment) Act 2021. The ceilings are prepared to operate within the parameters of the five-year Carbon Budgets and reflect the emission reduction pathway required to meet the legally-binding targets for 2030 and 2050.

The sectoral configuration of the SECs seeks to reflect the structure of the Environmental Protection Agency's Emissions Inventory, which breaks down emissions into a range of categories across the economy

The sectoral approach supports the enhanced governance framework set out by the 2021 Amendment Act by attributing responsibilities for the performance of various sectors' against their ceilings to the relevant Government Ministers.

This sectoral approach is also integral to the processes that help prepare, deliver and monitor the annual update to the Climate Action Plan by providing a sectoral framework for setting out the various actions and measures required to ensure compliance with the Carbon Budgets.

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Question by Australia at Thursday, 28 September 2023

Category: Progress towards the achievement of its quantified economy-wide emission reduction target



Type: Before 30 September

Title: Submitted Question #3

The single largest source of emissions in Ireland's projections is the agriculture sector. Ireland's CAP21 identifies a range of measures projected to decrease agricultural emissions by 20.3% over the 2020 to 2030 period. Many of these measures involve the adoption of best practice agricultural management. **Australia would like to know what policies and measures Ireland is considering to support farmers and land managers to adopt best practice land management?**

Answer by Ireland, Wednesday, 29 November 2023

Our EU Common Agricultural Policy Strategic Plan will support farmers to transition to more sustainable practices while also supporting family farm incomes, with a budget of €9.8bn. In addition, a budget of €1.5bn for the new agri-environment scheme ACRES, a five-fold increase in funding for Organic Farming to €256m to triple the area of utilised agricultural area and €260m to improve the carbon efficiency of the suckler beef herd through genetic improvement.

On forestry; Ireland recognises that carbon sequestration is one of a range of important services being provided by sustainably managing forests. Ireland's Climate Action Plan recognises the positive impact that forests and forest products make in sequestering and storing carbon. This plan includes a new well-funded Forestry programme which was launched in September 2023.

The implementation of a low methane emitting breeding programme has significant potential to harness the genetic variation for methane emissions that exists within the Ireland's national bovine herd.

On knowledge transfer; the Teagasc (Ireland's Agricultural Development Authority) Signpost Programme, supported by Ireland's Department of Agriculture (DAFM) is working with Irish farmers and a partnership of over 60 partner and supporter organisations across the agri-food sector, to reduce Green House Gas emissions, reduce Ammonia emissions, reduce nutrient losses, enhance biodiversity, and improve the efficiency of food production. A cohort of 100 Signpost demonstration farms is at the centre of the Signpost Programme and cover all mainland-based enterprises. The objective of the Signpost farms will be to employ the emerging new Green House Gas mitigation technologies, such as new breeding programmes and feed additives, and to facilitate the transfer of knowledge from these farms to every farm in Ireland.

With the support of DAFM; Teagasc the Irish Cattle Breeding Federation and Ireland's Bord Bia are jointly developing a toolkit of tailored farm sustainability support and solutions for Irish farmers called "AgNav". From 2024, it is targeted that 10,000 farmers will be utilising the platform each year. The platform will enable an analysis of an individual farms emissions and aid the farmer together with his climate advisor to identify the best measures on climate action and sustainability for implementation on their farm.

DAFM is also supporting the taking and analysis of up to 90,000 samples through phase

two of the soil sampling and analysis program over the next 12 to 18 months. Phase two will build on data gathered during the initial programme by providing valuable information to farmers to inform decisions that promote the health of their soils. Nutrient management and soil health are central to achieving economic and environmental sustainability on farms. DAFM has allocated €8.8 million to this programme. These supports will enable farmers to reduce chemical fertiliser inputs, an economic benefit to the farmer and an environmental benefit to society while maintaining food production.

Science, innovation and knowledge exchange will be critical in delivering our 2030 and 2050 commitments. Research supported by DAFM and other public research funders will provide new tools and technologies to mitigate and offset agricultural emissions. Our funding has helped develop agriculture's long-term climate infrastructure, with the creation of a National Agricultural Soil Carbon Observatory network of 30 covariance towers, Greenfeed systems and 10 soil moisture monitoring stations. International research partnerships and collaboration on climate change has also increased in the last ten years, with funding rising to 18% of our total annual research budget. This has delivered total investments of €35 million towards projects to address our shared climate challenges.

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Question by Australia at Thursday, 28 September 2023

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 30 September

Title: Submitted Question #2

Under the 'with additional measures' (WAM) scenario, Ireland projects that residential sector emissions will decrease 43.8% between 2020 and 2030. **What challenges do Ireland expect to face whilst implementing these additional measures in the residential sector, and what plans are in place to overcome these challenges?**

Answer by Ireland, Wednesday, 29 November 2023

To achieve our ambitious GHG reduction targets in the residential sector, Ireland must reduce the use of all fossil fuels (coal, natural gas, oil and Peat) that are currently used to heat our buildings. The Sustainable Energy Authority of Ireland's most recent Energy in Ireland report indicates that fossil fuels are used as the heat source in 73% of dwellings. The decarbonisation of the sector will be achieved by a combination of retrofit and switching to renewable sources of heating such as heat pumps, district heating and biomethane.

The most significant challenge facing the sector is the age of current dwelling stock. Data from the 2022 Census indicates that 65% of dwellings were built before the year 2000 and 81% of dwellings have a BER of B3 or lower. The strengthening of the Building

Regulations has resulted in newer dwellings being constructed to a higher standard of energy efficiency: 99% of dwellings constructed in the period 2020 to 2023 had a BER rating of A. In order to switch to heat pumps, those dwellings must be retrofitted. Consequently, in 2021, Ireland published an ambitious National Residential Retrofit Plan that sets out how Government will deliver on Climate Action Plan targets of retrofitting the equivalent of 500,000 dwellings to a BER of B2/cost optimal and installing heat pumps in existing dwellings to replace older, less efficient fossil-fuel heating systems by the end of 2030.

In addition, Ireland proposes to develop District Heating and renewable gases as alternatives to fossil fuel-based heating. These solutions offer alternatives to fossil fuels in dwellings that are difficult to retrofit.

The availability of a skilled workforce is a significant challenge facing the delivery of Ireland's ambitious climate action targets. To address this, five NZEB/Retrofit Centres of Excellence have been established, and these centres currently provide over 50 free and flexible upskilling and reskilling programmes to the construction sector.

The Department of the Environment, Climate & Communications has established a Heat and Built Environment Delivery Taskforce (HBET) that will accelerate and drive delivery in this area. HBET will focus on the acceleration of system-wide project and programme delivery, ensuring blockages are removed in relation to retrofitting, renewable heat, district heating, decarbonisation of heating and operational energy use optimisation in building stock. HBET has already identified five cross-sectoral focus areas that need to be addressed to accelerate decarbonisation: policy/regulation, funding, communications, skills and support delivery.

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[Question by](#) Australia at Thursday, 28 September 2023

[Category:](#) Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

[Type:](#) Before 30 September

[Title:](#) Submitted Question.

**Could the Republic of Ireland explain the process for baseline setting for its first two five-year carbon budgets?**

[Answer by](#) Ireland, Wednesday, 29 November 2023

As per the requirements set out in Section 6A of the Climate Action and Low carbon Development (Amendment) Act 2021, the Climate Change Advisory Council prepared and proposed a carbon budget programme that set out an emission 51% reduction in emissions by 2030 compared to a baseline of 2018. The technical report setting out the

The baseline year of 2018 for the 2030 emission reduction goal, which was to be achieved via the first selected as it was the year with the most recent final emissions data collected by the EPA when the cur 2020.

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**Question by** United Kingdom of Great Britain and Northern Ireland at Friday, 22 September 2023

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 30 September

**Title:** Question to Ireland on its Climate Action Plan

Thank you, Ireland, for the opportunity to comment on your 5th Biennial Report and 8th National Communication. We commend Ireland's delivery rate of 64% against its Climate Action Plan (CAP) 2021, demonstrated in the most recent CAP quarterly progress report. Can you share which actions were most effective to achieve this delivery rate and any lessons learned during delivery?

**Answer by** Ireland, Wednesday, 29 November 2023

The question mentions a 64% implementation rate for CAP21 – that was the delivery rate for Q4 of CAP21. The overall implementation rate of CAP21 (combining delivery from Q4 2021 to Q4 2022) concluded at 79%, with 760 of 965 CAP21 measures completed.

Responsibility or delivery of climate action is spread across Government and the Climate Action Plan is a whole of government plan. Individual Ministers across Government have responsibility for delivery in their own sectoral areas. This cross-government and cross-departmental approach assists with implementation of the Plan.

The key reasons for delay noted in CAP21 included issues of alignment and knock-on effects with delays in one measure affecting the timely delivery of others; public stakeholder consultations; capacity and capability constraints; the complexity of climate action; external factors; legislative delays; and administrative clearance delays. In order to improve delivery, CAP23 has a focus on a smaller number of high-impact actions. Delivery taskforces have been established across the sectors to focus on key specific areas or initiatives of climate delivery that require cross-Government collaboration for implementation. The Climate Action Delivery Board also has an enhanced role in relation to delivery, including providing recommendations for overcoming barriers to implementation. (The Climate Action Delivery Board (CADB) is composed of Secretaries General of Government Departments with key responsibilities in driving climate action).

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**Session SBI59 (2023)**  
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