Session SECONDMA2021 (2021)

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A compilation of questions to - and answers by - United Kingdom of Great Britain and Northern Ireland [exported on 30-10-2021] by the UNFCCC secretariat

Question by United States of America at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Inventory revisions

Can the UK describe the methodologies behind the changes since the last BR, as described in the revisions to the inventory table (page 26)?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Revision to upstream oil and gas combustion estimates, and method change for Energy from Waste plant using revised UK energy statistics: The revisions to upstream oil and gas combustion estimates are not methodological changes, but instead due to the adoption of installation data not previously available. The method change for Energy from Waste was to adopt an approach of using IPCC default emission factors for each of the biogenic and non-biogenic fractions of municipal solid waste (MSW) combusted at Energy from Waste plants, based on national energy statistics of the split between biogenic and non-biogenic MSW. The previous approach was based on an isolated compositional analysis of MSW, which didn't reflect changes in composition with time.

New installation data for upstream oil and gas fugitive estimates: This is discussed in more detail in the 2017 National Inventory Report (NIR), chapter 3, MS 18 - "There have been some minor revisions to UK estimates for sources from the upstream oil and gas sector and downstream petroleum processes, where QC and stakeholder consultation with regulators and operators has enabled the Inventory Agency to address any identified reporting gaps or inconsistencies. New data have become available for emissions in 2016 from the newly-commissioned Shetland Gas Plant, and these data have been added to the UK inventory, leading to minor increases in emissions from process sources (1B2b3) and flaring (1B2c2ii); and updated 2016 data have been provided for the Frigg terminal, also leading to small increases in reported flaring emissions (1B2c2ii)."

Revisions to natural gas use in energy statistics and off-road machinery gas oil allocations: There was no major methodological change in the GHG inventory; the main change was adopting revised data from energy statistics. The N2O emission factor for off-road machinery was also reviewed to be more consistent with other mobile combustion sources.

Revision to the UK demand figure for petroleum coke in the UK energy statistics: There was no major methodological change in the GHG inventory; the main change was adopting revised data from energy statistics.

Revision to all shipping gas oil and fuel oil activity data and emission factors: These changes are linked to a study 'A review of the NAEI shipping emissions methodology'; Ricardo, 2017, https://naei.beis.gov.uk/reports/reports?report_id=950.

Reconciliation of harvest volume and forest age data: This is discussed in more detail in the 2017 NIR, section 6.2.7 - "The process of generating activity data for the Forest Land category takes information from the forest inventories for the private and public forest estates and assigns the forest areas to either afforestation or restocking (i.e. this land has been restocked at least once, so the age of the forest in the inventory does not represent the year the land was afforested) with a range of forest management regimes. In order to better ensure consistency between the modelled timber production and the timber production statistics, an automated algorithm was introduced to adjust the assumed forest management to reconcile the modelled and reported levels of timber production."

Question by United States of America at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Role of Subnational Actors

The 42% decrease in emissions from 1990 to 2017 is commendable. Could the UK describe the role that subnational actors and civil society played in making those emission cuts, particularly with regards to the move away from coal power generation?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Civil Society and Non-State Actors

We consult on all policy changes, and we will continue to make it easier for people and businesses to feed into key policy decisions on net zero. For instance, we will explore how to improve and enhance public facing climate content and advice on gov.uk.

We will also enhance our digitally-led Simple Energy Advice (SEA) service to provide homeowners with advice for improving and decarbonising their homes, including tailored retrofit advice in local areas, and links to local, accredited, trusted installers. Government support will continue for UK businesses to meet their net zero commitments, including

exploring a government-led advice service that consolidates and simplifies advice and other support on net zero.

Coal Power

Coal-fired electricity generation in the UK has declined significantly in recent years – from almost 40% of the UK's electricity supply in 2012 to just 2% in 2020. A number of government policies have contributed to this reduction. Several key policies are summarised below.

Commitment to Phasing Out Unabated Coal Generation

In November 2015, the government announced its intention to consult on proposals to phase out coal generation in Great Britain by 2025. It ran a consultation seeking views on proposals for putting this into effect from November 2016 to February 2017. The consultation received almost 6,000 responses from individuals, businesses, trade bodies, non-governmental organisations (NGOs) and other organisations. In September 2017, the prime minister confirmed that the government would proceed with measures to regulate the closure of unabated coal by 2025.

Announcing this policy eight years ahead of the deadline ensured that industry had considerable advance notice and was able to wind down operations in an orderly way, without disruption to security of electricity supply. This in turn enabled the government to run a second consultation from December 2020 to February 2021 on bringing forward the target phase-out date by one year. A wide range of stakeholders responded, with a clear majority in favour of bringing forward the phase-out date. Following this, the government announced in June 2021 that the phase-out of coal generation would be brought forward to October 2024.

Emissions Performance Standard

The Emissions Performance Standard (EPS) is a regulation established in 2014 to ensure that new fossil fuel-fired electricity generation contributes to electricity security of supply in a manner consistent with the UK's decarbonisation objectives.

The EPS places a limit of 450gCO2/kWh if the plant is operating at baseload on the CO_2 emissions produced by fossil-fuel generation plants that are above 50MWe and that received development consent after 18 February 2014. A new coal plant would be unable to meet this limit without taking steps to abate its emissions such as investing in carbon capture technology.

Since the introduction of the EPS, no new coal-fired plant have been constructed in the UK.

Carbon Price Support

The Carbon Price Support (CPS) is a tax on power sector CO_2 emissions. It was established in 2013 to accelerate decarbonisation by strengthening the price signal from the EU ETS, which was weaker than expected at the time due to over-allocation of allowances. Today, the CPS is added to the level of the UK ETS allowance price.

The CPS has had the effect of making higher-carbon generation sources more expensive relative to lower-carbon sources. This has worsened the economics of coal-fired plant and accelerated their replacement in the electricity mix by other forms of generation.

Question by Canada at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Industrial sectors impacted by the Industrial Heat Recovery Support (IHRS) program

As mentioned in Table 3 of the BR4 (p124), United Kingdom has implemented the Industrial Heat Recovery Support (IHRS) program in 2018 as a mitigation measure to potentially increase the deployment of heat recovery technologies from industrial processes. Could the UK explain whether there was any sector prioritization? On which sector(s) was the focus put?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The Industrial Heat Recovery Support programme was open to companies in all industrial manufacturing sectors as set out in the Office of National Statistics (ONS) Standard Industrial Classification (SIC) codes 10 – 33. The Programme was extended to Data Centres (SIC Code 63110 - Facility Heating Ventilation and Air Conditioning). These sectors were included on the basis of the availability of high grade heat sources, coupled with potential heat uses, and the need to support particular manufacturing sectors in overcoming barriers to energy efficiency investment. At the time of closing for applications in July 2020, the IHRS had agreed to fund projects in the following sectors:

Percentage of total grants at time of offer

Non-metallic minerals	28.3
Food	23.3
Basic metals	20.0
Chemicals	13.3
Other manufacturing	5.0
Paper and paper products	3.3
Glass and glass products	3.3
Fabricated metals	1.7
Clothing	1.7

Question by Canada at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Completing the time series for the use of SF6 as a tracer gas to certify fume hoods

On Pg. 307 of the 2020 NIR, the UK described their modified method for estimating SF6 emissions from use as a tracer gas to certify fume hoods (number of tests multplied by company-specific emission factors). The UK explained in the NIR that the activity data (number of tests) has been extrapolated backwards from the 2012 data collection year using the UK's historical GDP growth rate and the founding date of the facilities, and that the emission factors were held constant unless a company specified a volume change date and quantity. Can the UK please elaborate on the post-2012 activity data and emissions assumptions?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Similar to the backwards extrapolation, estimates for 2013 onwards use the activity data for 2012 and are then extrapolated forwards using GDP growth rates, with emission factors held constant.

Question by Canada at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Assumptions related to semiconductor manufacturing emissions

In Table 4.28 of Pg. 306 of the 2020 NIR, the UK transparently presented their key assumptions used to estimate emissions from semiconductor manufacturing. Can the UK please elaborate on how assumptions related to abatement uptake (fraction fed to abatement) were made?

In addition, can the UK explain why the use of NF3 remote cleaning processes was assumed to start in 2003?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The assumptions about PFC abatement were developed during a study: 'Emissions and Projections of hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride for the UK and Constituent Countries'; AEAT, July 2003. http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=11640

From this study, it is understood that very little abatement was installed in UK semiconductor fabrication plants prior to a Plymouth plant in 2003, and that the UK trade association expected abatement would be installed at all UK abatement systems by 2025. The UK inventory agency made some judgements based on this about the rate of abatement improvement, and conservatively assumed that the trade association’s ambitions wouldn’t be fully met.

The assumption that NF3 remote cleaning started in 2003 is based on the study: 'Review of data and methodologies used in the calculation of UK emissions from F-Gases'; ICF International, April 2014 (available at https://naei.beis.gov.uk/reports/reports?report_id=793).

The UK is part-way through an improvement project to review the semiconductors estimates, including assumptions about the proportion of abatement installed. We expect the 2022 submission of the NIR (for the 1990-2020 inventory) will include updated information to reflect this project.

Question by Canada at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Ethylene Oxide CH4 facility-provided data emissions reporting

On Pg. 257 of the 2020 NIR, the UK explained that they used PI (Pollution Inventory) data to estimate CH4 emissions for Ethylene Oxide (CRF 2B8d). According to the 2006 IPCC Guidelines, CH4 emissions may be fugitive emissions and/or process vent emissions. What steps did the UK take to verify that the facility-reported CH4 data was complete and from Ethylene Oxide industrial processes (as opposed to on-site fuel combustion and other sources).

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The UK doesn't have access to any additional data to improve the understanding of the scope and resolution of the methane estimates that the question refers to, as the Dow Chemical site at Wilton, the sole UK manufacturer of Ethylene Oxide (EO) across the time series, closed in January 2010, as noted on page 256 of the 2020 National Inventory Report. There are a number of chemical manufacturing processes in the UK where the emission estimates reported by plant operators (under long-standing environmental reporting regulations, which are now covered by Industrial Emissions Directive/Environmental Permitting Regulations (IED/EPR) in the UK) are used to directly inform the UK inventory. The UK inventory agency takes a proportionate approach to requesting additional detail from operators, in order to minimise the risks of either gaps or double-counts in inventory methods, as the question alludes to.

The UK prioritises research and consultation with operators towards the emission sources that are most significant in the overall UK context, in line with inventory good practice, to minimise uncertainty as best we can within the available resources. Further, we act on any specific recommendations from UNFCCC Expert Review Teams.

Question by Canada at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Uncertainty drivers

In section 5.8.3 of its BR4, the UK discusses its overal uncertainty associated with it's GHG emissions projections. Apart from fuel prices and economic growth, what key drivers of uncertainty for energy and emissions have been considered? What are some of the UK's

larger historical uncertainties?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Apart from fossil fuel prices and economic growth, key drivers for uncertainty include policy savings from transport and other sectors, projected transport demand and efficiency, equation re-estimations, projected population and household growth, and methodological uncertainty in LULUCF. Historically, GDP, LULUCF, fossil fuel prices, and transport demand/policy have tended to result in the largest emissions uncertainty.

Question by Canada at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Harvested Wood Products

In section 2.6, the UK provides an explanation of changes since its BR3. One point identifies the reconciliation of harvested volume and forest age data. Does a 157% decrease in emissions in harvested wood products mean there is increased sequestration?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The forest model and associated input data used up until the 1990-2016 inventory were found to significantly underestimate wood production compared to the UK wood production statistics for years after the then most recent forest inventory data in 2012-14. Improvements were made to the model input data to ensure the output better matched the wood production statistics. This has had the effect of increasing harvesting significantly in the years after 2012.

The data used for the 1990-2017 inventory better matched records of wood production which showed an increase in harvest. So the inputs to the harvested wood products pool have increased, increasing sequestration in that pool. Increased harvesting led to an increased reported loss of living biomass on forestland remaining forestland which decreased sequestration on forest land compared to the previous inventory submission.

Question by Canada at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Mainstreaming of gender considerations

How is the UK mainstreaming gender considerations into its domestic climate policy?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The UK is dedicated to promoting equality and inclusion, including women's empowerment, gender equality and the implementation of the UNFCCC Gender Action Plan. Public authorities must fulfil responsibilities set out under the UK's Equality Act (2010), which covers a range of protected characteristics.

The UK continues to consider equality issues in domestic decarbonisation policies. For example, specific policies and targets have been established to enhance diversity, gender equality and women's participation in the offshore wind and nuclear sectors. These have been set out in the Offshore Wind and Nuclear Sector Deals.

The UK's recently published Net Zero Strategy commits the UK to continuing to make it easier for people and businesses, including those who are most marginalised, to feed into key policy decisions on net zero and that acknowledges low carbon transitions should be fair and affordable and not negatively impact disadvantaged groups. It reinforced the UK's commitment to strengthening the evidence base and understanding of differentiated impacts of climate change on men and women, the role of women as agents of change and on opportunities for women; and the UK's commitment to monitoring the impacts of our climate and clean energy policies, and any inequalities which arise. It flagged the UK's commitment under the 'Equal by 30 Campaign' to work towards equal pay, leadership, and opportunities for women in the global clean energy sector by 2030, and championed increased gender representation across the UK's international organisations.

We look forward to welcoming Parties to the UK's Pavilion, where we will be hosting several COP26 Gender Day events, including a panel discussion to discuss options for managing a gender-sensitive transition to net zero.

Question by European Union at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Mitigating emissions of fluorinated gases

According to the information provided in the United Kingdom's CTF table 3, the F-gas Regulation of 2015 is estimated to lead to an important mitigation impact in 2020 (approx. 3.5 Mt CO_2eq), which is larger than the impacts estimated for other recent measures. Which factors made it possible to achieve such a mitigation impact by 2020, and which lessons could be learned from this policy for the development and implementation of other policies and measures?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The mitigation impact is achieved through a combination of strict measures to phase down the quantity of F-gases sold in the UK and mandate their effective lifecycle management. These measures are implemented under Regulation (EU) 517/2014, "the F-gas Regulation", which was retained in UK law following the end of the transition period on 31 Dec 2020. Prior to that date, the UK implemented the EU's own version of the F-gas Regulation.

Regulation (EU) 517/2014 "the F-gas Regulation" continues to be directly applicable in Northern Ireland pursuant to the Agreement on the Withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community, signed in London and Brussels on 24 January 2020, which includes the Protocol on Ireland/Northern Ireland.

Principally the F-gas Regulation sets annual quotas for producers and importers of HFCs, the main group of F-gases, which are reduced every three years. Product and use bans are also used to restrict the most polluting products. Emissions are further reduced through requirements on leak checks, the containment and disposal of used gases and mandatory training and certification for handlers of F-gases.

These measures deliver an ambitious phase down of HFCs, earlier and faster than required internationally under the UN Montreal Protocol.

We would encourage other countries to consider adopting similar or equivalent measures, and to pursue further actions to enhance the benefits of the Montreal Protocol in tackling climate change.

Following the publication of an assessment report by the UK government as part of the review, we would be happy to exchange information with other countries regarding its findings.

Question by European Union at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Revisions of the greenhouse gas inventory in the energy sector

The United Kingdom has made various updates and revisions of methodologies in its greenhouse gas inventory since the publication of its Third Biennial Report in 2017, in particular in the energy sector. Could you provide some brief information on the types of updates made (e.g. whether they included more detailed activity data or updated emission factors). Could you share some lessons learned from these updates which may be helpful for other Parties in their aim to improve the quality of their greenhouse gas inventories?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Major changes in energy sector emissions estimates between the 3rd and 4th Biennial Reports (relating to estimates for 1990-2015 and 1990-2017 respectively) include:

· Revision to all shipping gas oil and fuel oil activity data and emission factors: These changes are linked to a study ‘A review of the NAEI shipping emissions methodology’; Ricardo, 2017, https://naei.beis.gov.uk/reports/reports?report_id=950.

· Method change for Energy from Waste plant using revised UK energy statistics: The method change for Energy from Waste was to adopt an approach of using IPCC default emission factors for each of the biogenic and non-biogenic fractions of MSW combusted at Energy from Waste plants, based on national energy statistics of the split between biogenic and non-biogenic MSW. The previous approach was based on an isolated compositional analysis of MSW, which didn’t reflect changes in composition with time.

· A number of recalculations relating to the adoption of the most recent data, and revisions to UK energy statistics

The most significant change in the Energy sector estimates came from the development of a

much more rigorous Tier 3 shipping inventory method, which was enabled through access to new activity data and information on the shipping fleet to inform emission factors.

This research led to a significant improvement in accuracy and completeness of the UK shipping emission estimates based on the access to detailed shipping movement data (from AIS transponder signals from every vessel in UK waters), databases of vessel type / design (e.g. engine type / capacity, fuel type, weight) and the development of a complex Tier 3 model.

The work that the UK has done could help to inform an approach to estimate shipping emissions for other countries and/or at a regional level. The UK team learned a lot of lessons in how to access, manage and process AIS data, and how to develop a pragmatic method that can be established for a number of years (and will then periodically need re-calibrating to reflect changes in the fleet).

From a policy perspective, the improvement in data resolution by shipping type enhances the usability of the data for policy analysis and projections / mitigation actions, i.e. enabling policy makers to consider the different levers that are available to different types of shipping activity (e.g. freight versus passenger versus industry-specific for oil and gas, fishing etc.

Question by European Union at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Emissions in the target year

In the Fourth Biennial Report of the United Kingdom, which was submitted in December 2019, greenhouse gas emissions (without LULUCF) were projected to be approx. 50 % below 1990 levels in 2020. Now that the year 2020 has passed, could you provide an updated estimate of total greenhouse gas emissions in that year? Which main factors affected any changes in emissions in that year?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

It should be noted that data for 2020 emissions are provisional, do not allocate non-CO2 emissions to different sectors, and do not follow the full methodology used for 1990-2019, and further noting that provisional estimates are subject to a greater range of uncertainty than the final figures.

The 4th Biennial Report estimated total emissions of 402MtCO2e in 2020. UK provisional statistics for 2020 indicate in 2020 were 414.1 MtCO2e (48.8% lower than they were in 1990).

Covid-19 drove a large reduction in the use of road transport during the nationwide lockdowns and the reduction in business activity. Therefore it is difficult to directly compare the projections with a counterfactual where economic activity continued as normal. However the following observations are of relevance:

· Since the Biennial Report was submitted, the UK has opted to fully report emissions from wetlands, which adds around 16MtCO2 p.a. to the total

· Emissions from energy supply, while continuing to fall in the UK, did not fall in the out-turn (79MtCO2) as much as in the projections (71MtCO2e)

Non-CO2 gases did not fall in the out-turn (88MtCO2e) as much as in the projections (~80MtCO2e). Fully exploring the reasons for this difference requires a sectoral breakdown of these numbers, which will be available in the 2022 inventory submission.

Question by Switzerland at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Promoting the uptake of low- and zero-emission vehicles

From the 4th BR Switzerland has learned that the UK is actively promoting the uptake of low- and zero-emission vehicles. Amongst related measures are steps to assure availability of charging points for electric vehicles at private homes, at enterprises, on-street as well as along the strategic road network.
i) Could the UK elaborate on progress achieved to date in the different areas of application?
ii) Are there early lessons learnt from implementation of these promotional measures?
iii) What is the role of government support as compared to private initiatives?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

i) Could the UK elaborate on progress achieved to date in the different areas of application?

Government and industry have supported the installation of over 25,000publicly available charging devices including more than 4,700 rapid devices – one of the largest networks of rapids in Europe. Government has also supported the installation of almost 250,000 chargepoints for people to use at their homes and business. The government regularly reviews and updates the UKs statistics on chargepoints, which can be found using the following link, https://www.gov.uk/government/collections/electric-vehicle-charging-infrastructure-statistics

As of July 2021, the progress achieved for the different areas of application, is as follows:

Domestic charging devices: Office for Zero Electric Vehicles (OZEV) funded grant schemes (Electric Vehicle Homecharge Scheme (EVHS) and the now closed Domestic Recharge Scheme) have delivered 197,985 domestic charging devices since 2013.
The EVHS has funded the installation of 157,652 domestic charging devices. In the last 12 months, the EVHS installed 44,685 devices, up nearly 40% from July 2020.

Workplace charging devices: The Workplace Charge Scheme (WCS) has funded the installation of 16,975 sockets in workplace car parks since the scheme started in 2016. Of these, 7,118 WCS sockets were installed in the last 12 months, up 72% from July 2020.

On-street residential devices: The On-Street Residential Chargepoint Scheme (ORCS) has funded 1,459 public charging devices which have been installed across local authorities in the UK. Of these, 778 charging devices were installed after being claimed for by the local authorities in the last 3 months. Funding has also been awarded for 3,282
more ORCS charging devices to be installed over the next year. We are currently developing a revised scheme, the ‘Local EV infrastructure investment scheme’ to encourage larger scale projects that leverage a great proportion of private investment.

Strategic Road Network: Thanks to Government and private sector leadership, there are more than 4,600 public rapid chargepoints across the UK. With 37 rapid chargepoints available per 100 miles on England’s strategic road network, we’re leading the way in charging infrastructure There are 474 rapid and ultra-rapid chargepoints across 97% of motorway service areas in England. By 2023 we expect to have at least 6 ultra-rapid chargepoints at every motorway service area in England.

ii) Are there early lessons learnt from implementation of these promotional measures?

Government has had a range of infrastructure grant offers to stimulate a nascent market – for homes, workplaces and for on-street charging, and to ensure provision ahead of need.

The chargepoint market has evolved over the past decade and the private sector has a

growing role in chargepoint funding, with areas such as homecharging showing signs of maturity. It has been important to monitor the market regularly and continue to adapt our schemes to reflect market conditions – for example varying the amount of support offered, or re-targetting the focus of the support. Building on the £1.9bn from Spending Review 2020, in the Net Zero Strategy (19 October) the Government has committed an additional £620m to support the transition to electric vehicles. The additional funding will support the rollout of charging infrastructure, with a particular focus on local on street residential charging, and targeted plug-in vehicle grants.

Reforms to our home and workplace charging schemes to focus support on those that need it most, including SMEs, renters and leaseholders

We have committed to publishing a strategy later this year for the roll-out of electric vehicle infrastructure. As part of this, we will set out the roles of different stakeholders in addressing barriers to chargepoint roll-out. This will include how the government will support the transition towards a commercial market, and how we will ensure that our interventions are targeted in areas and parts of the market where they are most needed to accelerate the transition to electric vehicles.

iii) What is the role of government support as compared to private initiatives?

The UK government wants to encourage and leverage private sector investment to build and operate a self-sustaining public network that is affordable, reliable and accessible. In many cases, the market is better placed than Government to identify the right locations for chargepoints, in partnership with local authorities.

The UK Government has an important role in setting the right framework for wider private investment in public chargepoints.The UK Government is also providing financial intervention to stimulatenecessary on-street EV charginginfrastructure projectsahead of needthat would not be delivered if left to the market.

The UK Government will continue to monitor market developments to determine whether any significant gaps in charging infrastructure provision emerge in the medium term and whether there may be a case for direct central government support in areas of market failure, which may include rural areas.

Question by Switzerland at Tuesday, 31 August 2021

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

Type: Before 31 August

Title: Measures after leaving EU

Many of the UK's measures aimed at reducing GHG emissions are rooted in policy packages developed by the EU. With the departure of the UK from the European Union, how will this affect the implementation of measures and the development of emissions, e.g., in the area of production and use of F-gases up to 2030?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The UK’s ambitious domestic emissions reduction commitments are unaffected by leaving the EU. They are enshrined in UK law in the Climate Change Act 2008. The UK was one of the first major economies in the world to legislate for a ‘net zero’ target. The UK has communicated a new Nationally Determined Contribution (NDC) which commits to reducing greenhouse gas emissions by at least 68% by 2030 on 1990 levels. This year the government also legislated for the UK’s sixth carbon budget, a target that will reduce greenhouse gas emissions by 78% by 2035 compared to 1990 levels.

The UK has set out how it plans to implement these measures through the Prime Minister’s Ten Point Plan for a Green Industrial Revolution, the recently published Net Zero Strategy, the Industrial Decarbonisation Strategy, the Transport Decarbonisation Plan, among other strategies and policies.

On F-gases specifically, Regulation (EU) 517/2014 “the F-gas Regulation” continues to be directly applicable in Northern Ireland pursuant to the Agreement on the Withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community, signed in London and Brussels on 24 January 2020, which includes the Protocol on Ireland/Northern Ireland.

Regulation (EU) 517/2014, “the F-gas Regulation”, including all of its requirements, were retained in the UK, thereby maintaining at least the same level of environmental ambition as the EU as well as certainty for businesses.

The Department for Environment, Food and Rural Affairs (Defra) are conducting a comprehensive review of the retained F-gas Regulation in Great Britain, to be completed by 2022 at the latest, that will assess what further measures can be taken to meet our Montreal Protocol obligations and help meet the UK’s net zero greenhouse gas emissions target by 2050. Any changes to the rules on the production and use of F-gases in the UK will follow the

review.

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: Ladfill Directive

Do you meet the target to reduce the amount of biodegradable municipal waste going to landfill under the Landfill Directive?
After expiring the target under the Landfill Directive in 2020, how do you reduce the amount and proportion of biodegradable waste, not limited to municipal waste, going to landfill?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Within the Landfill (Maximum Landfill Amount) Regulations 2011 the UK and its constituent nations had limits on the maximum amount of BMW by weight in tonnes that may be sent to landfill in 2013 and 2020. The maximum amount set for 2020 was 12,491,000 tonnes. Although data for 2020 is not yet available, 6.6 million tonnes of biodegradable municipal waste was sent to landfill in 2019 in the UK. The UK is currently on track to meet the 2020 target.

The Government continues to incentivise the diversion of waste away from landfill to be managed further up the waste hierarchy through the Landfill Tax. Landfill Tax operates at two rates: a standard rate for active waste of £96.70/tonne and a lower rate of £3.10/tonne for inert materials.

The Government's Resources and Waste Strategy (RWS), published in December 2018, is framed by natural capital and circular economy principles, and is guided by two overarching objectives: To maximise the value of resource use; and to minimise waste and its impact on the environment. Policies set out in the RWS that will result in a reduction in the amount of biodegradable material in the residual waste stream include:

· A long-term commitment set through legally binding targets to reduce residual waste. We intend to go out to public consultation on this target in early 2022.

· A target of less than 10% of municipal waste sent to landfill by 2035

· A commitment to explore policies to work towards eliminating all biodegradable waste to landfill by 2030.

· Mandating the collection of a consistent set of materials from households and businesses for recycling, which includes the separate collection of food and garden waste.

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: CO2 emission from waste management

While Table 19 shows that CO2 emissions from waste management are less than 0.5 MtCO2, does this mean there is no incinerator without energy recovery in the UK or the emissions from such incinerators is negligible? In any case, how do you promote energy recovery from waste incineration or regulate incineration without energy recovery? Also, how many tonnes of waste does the UK incinerate a year?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Emissions from the incineration of waste for energy recovery are counted under the national inventory as part of the energy sector rather than waste. Emissions from the incineration of waste without energy recovery are counted under the waste sector.

The promotion of energy recovery from waste incineration is incentivised by the waste hierarchy, which all waste operators, including local authorities, are legally obliged to take account of when considering their waste management services. The waste hierarchy ranks options for waste management according to their environmental impact. After waste prevention, priority goes to preparing waste for reuse, recycling, and then recovery (which includes energy from waste). Disposal, for example in landfill, is generally regarded as the worst option.

The introduction of a landfill tax has resulted in a significant reduction in the amount of waste going to landfill since it was introduced in 1996.

The UK established the Waste Infrastructure Delivery Programme (WIDP) in 2006 to provide support to Local Authorities to help accelerate the building of infrastructure needed to treat residual waste and increase recycling, minimising waste going to landfill. The programme runs until 2042.

The Resources and Waste Strategy set out a commitment to explore policies to improve the efficiency of energy from waste plants. Such policies include increasing the amount of waste incineration plants that are formally recognised as achieving recovery status. Numbers have increased from 22 out of 38 facilities (58%) in 2018 to 32 out of 45 facilities (71%) in July 2021. Government is targeting energy from waste incinerators to produce heat for heat networks as this substantially reduces the emissions from incinerators by making use of the otherwise wasted heat. Combined Heat and Power (CHP) can increase plant efficiency to over 40%.

All energy from waste plants in England are regulated by the Environment Agency (EA) through environmental permitting and must comply with the strict emissions limits set down in legislation.

The latest figures we have for the amount of waste incinerated are for the year 2018. In that year, the UK incinerated a total of 13 million tonnes of waste. Of this total, 7.3 million tonnes were incinerated in recovery status incinerators, with the remaining 5.7 million tonnes incinerated in facilities that do not meet this standard.

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: Landfill efficiency

Would you elaborate "small improvements in landfill efficiency"? How do these improvements contribute to the emission reduction from waste management?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

We will continue to explore policies to work towards eliminating all biodegradable waste to landfill by 2030; and will continue to explore new ways to ease the environmental impact of legacy landfills, in line with a commitment in the Resources and Waste Strategy, through new approaches to landfill aftercare. We will also support the waste sector in meeting their target to increase capture of methane emissions from landfill to 85% by 2030 through improvements in landfill gas capture efficiency.

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: Uncertainty assessment of projections

On p.72–73 of the BR4, the result of the uncertainty assessment of projected emissions by Monte Carlo simulation is provided. Is this Monte Carlo simulation conducted for all emission sectors? In addition, the upper bound of the 95% confidence interval for projected emissions in 2030 is considerably larger than the emissions under the low fossil fuel prices and the high UK GDP growth scenarios shown in the sensitivity analysis. What are the main reasons for this high upper bound?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The Monte Carlo simulation in BR4 considered all UK emissions except from the electricity supply sector. The Monte Carlo interval accounts for uncertainties in modelling methodologies and other uncertainties (economic, policy, demographic) in emissions sectors as laid out above, hence shows substantially larger uncertainty than the scenarios which just show high/low fossil fuel prices and GDP in isolation. Additionally, uncertainty is greater in later years, due to the compounding effects of changes such as demographic or economic factors over time.

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: Mitigation impacts of Sustainable Energy-Using Products – Pre-Low Carbon Transition Plan

The mitigation impacts of the Sustainable Energy-Using Products – Pre-Low Carbon Transition Plan reported in CTF Table 3 are on a decreasing trend since 2020 and are projected to increase emissions in 2035, instead of reducing them. Could the UK provide the reason for this?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

As the electrical supply grid of the UK decarbonises by moving to more sustainable sources, emissions savings from these policies tend to decline. A side effect of improving efficiency of electrical supply products is that they emit less heat, which in turn lead to a slight increase in fuel consumed for heating. In the long run, this can tend to slightly increase emissions. An additional factor is that such policies have a built-in assumption that the product market will eventually catch-up in terms of efficiency in the absence of regulation, corresponding to reduced savings in later years.

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: Estimation of mitigation impacts of policies and measures in the agriculture sector

CTF Table 3 provides information on several policies and measures for the agriculture sector, but the mitigation impacts of many of them are not reported. What technical constraints are there in estimating the mitigation impacts of policies and measures for the agriculture sector?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Tracking the impacts of existing policies is complex due to the overlaps in specific actions and technologies mandated by them. Furthermore, a lack of detailed activity data can be an issue in some cases. It is easier to capture the emissions impacts in aggregate, and our Nationally Specific, largely T3 Agricultural accounting model can capture their impacts as part of national reporting.

The UK’s decision to leave the EU has provided an opportunity to fundamentally rethink our approach to delivering agricultural decarbonisation through a radical departure from the Common Agricultural Policy. This includes a move towards environmental land management schemes that pay farmers based on the delivery of public goods, rather than a single farm payment based on land area. Robust monitoring and evaluation of environmental impacts will be a component of these policies going forwards.

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: Estimation of mitigation impacts of introduction of smart meters

Page 109 of the BR4 provides an overview of the smart metering programme and information on its mitigation impact.
1. The emission reductions resulting from this measure are the largest in 2025 and decrease toward 2030 and 2035. Could the UK provide the reason for this?
2. What percentage of energy consumption in each household is expected to be reduced by the introduction of smart meters?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

1. The emission reductions resulting from this measure are the largest in 2025 and decrease toward 2030 and 2035. Could the UK provide the reason for this?

Emission reductions associated with smart metering result from a fall in average energy consumption and are calculated using marginal emissions factors from HM Treasury's Green Book supplementary guidance for government appraisal and evaluation. These are comparatively higher in 2025 than in 2030 and 2035, reflecting the expectation that the electricity grid will continue to decarbonise over time as the UK transitions to Net-Zero. As market-wide smart meter coverage is anticipated in each of these years, with reductions in energy consumption being relatively consistent across these periods, the marginal emissions factors are the determinant of differences in total emission reductions in the aforementioned years.

2. What percentage of energy consumption in each household is expected to be reduced by the introduction of smart meters?

Based on the available evidence we have determined that the gross average reductions in consumption per household will be as follows:

· 3.0% for electricity (credit and prepayment).

· 2.2% for gas credit and 0.5% for gas prepayment.

More detail on these figures can be found in the Smart meter roll-out: cost-benefit analysis 2019. https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019

Question by Japan at Monday, 30 August 2021

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

Type: Before 31 August

Title: Sector classification in projections

The UK uses its own sector classification for which a definition is provided in Annex 2 of the BR4 in its projections. What are the background and advantages of using this own sector classification?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The sectoral definition used for energy and emissions projections in BR4 are the primary sectors in which we nationally report the greenhouse gas emissions inventory and one of the main sector classifications by which we report the energy and emissions projections. These sectors broadly conform to the international reporting requirements set out in Section 19. b), Annex V. Policies and Measures of Decision 6/CP.25 and are also useful sectoral definitions for UK PaM quantification.

The UK's national Energy and Emissions Projections publication also includes two other emissions taxonomies: https://www.gov.uk/government/collections/energy-and-emissions-projections

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Question by New Zealand at Monday, 30 August 2021

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

Type: Before 31 August

Title: Agriculture

1. Do the UK's agricultural emissions projections (Section 6.5.6 of BR4) take into account any existing or emergent mitigations or technologies, such as low emissions breeding, methane inhibitors or vaccines, or on-farm management practices?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The UK's agricultural emissions projections only reflect firm and funded policies that are in place. As such the impacts of innovative technologies are not included in the projections.

The UK's decision to leave the EU has provided an opportunity to fundamentally rethink our

approach to delivering agricultural decarbonisation through a radical departure from the EU's Common Agricultural Policy. This includes a move towards environmental land management schemes that pay farmers based on the delivery of public goods, rather than a single farm payment based on land area. Future agricultural projections will include the impacts of such schemes, including novel on-farm management practices, improved breeding and the impacts of methane inhibitors once they have completed the necessary regulatory approvals process.

Question by New Zealand at Monday, 30 August 2021

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

Type: Before 31 August

Title: LULUCF

1. Noting the UK's LULUCF emissions are expected to switch from being a sink to a source of emissions, New Zealand is interested to know of any plans the UK has to manage its forests and increase forest cover to maximise forests as a carbon sink?

2. How does the projected change in net emissions from the LULUCF sector impact on the UK's climate change targets?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The UK government and the Devolved Administrations have committed to a significant increase in planting of forests to enhance carbon storage and biodiversity.

The Nature for Climate Fund in England is investing over £500m towards our aim of trebling the woodland creation rate in England contributing towards an overall UK target of 30,000 hectares by the end of this parliament. With the boost to funding announced in our Net Zero Strategy, we ensure total spend of more than £750m by 2025 on peat restoration, woodland creation and management. This will enable more opportunities for farmers and landowners to support Net Zero through land use change.

Any change in emissions from all parts of the LULUCF sector is accounted directly against our economy wide NDC target.

Question by New Zealand at Monday, 30 August 2021

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

Type: Before 31 August

Title: Methane

1. Noting the UK's methane emissions are projected to increase, what measures are being taken to reduce methane emissions from the energy, waste and agricultural sectors?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

UK methane emissions are not projected to increase. Including existing (pre-2020) policies, the UK's methane emissions areprojected to fall by around 11% by2030.

The UKhas just published its Net Zero Strategy which contains policies and proposals that will reducemethanefurtherthan this baseline level of reductions. The UK is taking a variety of measures to reduce methane emissions across the energy, waste and agricultural sectors, as outlines below.

Waste

We aim to reduce methane emissions from waste through a range of policies, Including:

· A long-term commitment set through legally binding targets on resource efficiency and waste reduction. We intend to go out to public consultation on this target in early 2022.

· An ambition of less than 10% of municipal waste sent to landfill by 2035

· Mandating the collection of a consistent set of materials from households and businesses for recycling.

· A commitment to explore for the near elimination of all biodegradable municipal waste to landfill by 2028.

Government continues to incentivise the diversion of waste away from landfill to be managed further up the waste hierarchy through the Landfill Tax. Landfill Tax operates at two rates: With effect from 1 April 2021, a standard rate for active waste of £96.70/tonne and a lower rate of £3.10/tonne for inert materials. This has resulted in 8.5% of local authority waste in

England going to landfill in 2019/20, a decrease of over 90 per cent since 2000/01.

We will also continue to explore new ways to ease the environmental impact of legacy landfills, in line with a commitment in the Resources and Waste Strategy, through new approaches to landfill aftercare. We will also support the waste sector in meeting their target to increase capture of methane emissions from landfill to 85% by 2030 through improvements in landfill gas capture efficiency.

Energy

The UK Government has endorsed the World Bank's 'Zero Routine Flaring by 2030' initiative to eliminate routine flaring as soon as possible, and no later than 2030. Industry is taking steps through its Methane Action Plan, which commits to halving methane emissions by 2030. The Oil and Gas Authority (OGA) has published Flaring and Venting Guidance (June 2021), which spells out the expectation that all new projects should be zero routine flaring and venting; and all facilities should be zero routine flaring and venting by 2030 or sooner.

Additionally, the North Sea Transition Deal (published in March 2021), sets targets for the oil and gas sector to reduce wider GHG emissions from offshore production by 10% by 2025 and 25% by 2027 and has committed to cut emissions by 50% by 2030, which puts the sector on a path to deliver a net zero basin by 2050 (step-change abatement will be delivered by the electrification of offshore assets, through connections to onshore networks or offshore renewables).

Agriculture

The UK Net Zero Strategy has been published in advance of COP26, setting out a range of specific policies and actions to reduce methane emissions from livestock. For example, whilst it is an emerging technology, the UK Government is actively investigating the promising role feed additives with methane inhibiting properties could play in delivering emissions savings in the medium term.

The Department for Environment, Food and Rural Affairs (Defra) will also develop a Farming for Net Zero resource, providing advice to farmers on good practice techniques to understand, manage and abate GHG emissions

Question by New Zealand at Monday, 30 August 2021

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

Type: Before 31 August

Title: Emissions trading scheme

1. Could the UK please provide any information on the expected changes to their mitigation levels and pathways following the launch of the UK ETS, as opposed to those relating to the EU ETS as reported in the UK's BR4?

2. Does the UK plan to include emissions/removals from forestry in the UK ETS?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Following a consultation in 2019, the four governments of the UK established the UK ETS in January 2021 as the UK's key carbon pricing policy after leaving the EU system. The UK ETS will promote cost-effective decarbonisation, allowing businesses to cut emissions where it is cheapest to do so. The UK ETS cap was set 5% below the UK's expected notional share of the EU ETS cap for Phase IV, signalling an increased level of ambition of the UK's carbon pricing policy while ensuring a smooth transition for industry. The UK has committed, by law, to reduce emissions to net zero by 2050 and the UK ETS will play a key role in achieving this. We will consult on aligning the UK ETS cap with our net zero goals in due course.

We are committed to exploring ways to develop the UK ETS in future and as well as consulting on a net-zero cap we will be carrying out a review of free allocation to ensure it remains fair and proportionate and we have committed to exploring expanding the UK ETS to other sectors.

The UK ETS does not currently include emissions or removals from forestry but as set out in the Energy White Paper. We recognise the importance of all Greenhouse Gas Removals (GGRs) in tackling climate change and the UK Government has committed to exploring how the UK Emissions Trading Scheme could incentivise the deployment of greenhouse gas removals.

Our immediate priority is to accelerate the development of robust, low cost arrangements for monitoring, reporting and verification of emissions and carbon abatement projects in agriculture in order to unlock revenue streams for investment in cost effective greenhouse gas abatement opportunities at a larger scale.

For info:

Response to the consultation on Future of UK Carbon Pricing in 2019
https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing

Information on UK ETS free allocation review call for evidence
https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review-call-for-evidence

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Question by New Zealand at Monday, 30 August 2021

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

Type: Before 31 August

Title: Agriculture

1. Section 5.2 of the UK's BR4 states that scenarios show that additional, planned policies mainly affect CO2 emissions. Does the UK expect that existing measures are sufficient to achieve the reductions necessary from sectors for which the primary greenhouse gas emissions are not CO2 (including agriculture)?
2. Does the UK intend to explore emissions pricing for agricultural emissions as part of its national emissions trading scheme?
3. The UK noted a mitigation action for agricultural emissions is the Agricultural Action Plan. Could more information please be provided on this, including its implementation, the organisations involved, and the main objective of the plan?
4. How will the UK's devolved administrations contribute to the Agricultural Action Plan?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

Does the UK expect that existing measures are sufficient to achieve the reductions necessary from sectors for which the primary greenhouse gas emissions are not CO2 (including agriculture)?

Please refer to New Zealand's question on methane.

Does the UK intend to explore emissions pricing for agricultural emissions as part of its national emissions trading scheme?

Please refer to New Zealand's question on agriculture and the UK ETS.

The UK noted a mitigation action for agricultural emissions is the Agricultural Action Plan. Could more information please be provided on this, including its implementation, the organisations involved, and the main objective of the plan? How will the UK's devolved administrations contribute to the Agricultural Action Plan?

The Agricultural Action Plan was established in 2011 as a voluntary initiative to reduce GHGs from agriculture. The plan was promoted by major farming organisations and industry bodies including the UK's National Farmers Union, Country and Land Business Association, and Agricultural Industries Confederation.

The main objectives are to reduce agricultural emissions by 3Mt by 2022, the end of the UK's 3rd carbon budget period. The plan applies to England only, and the devolved administrations have pursued alternative approaches. The most recent review of the action plan was published by Defra in 2016, and recommended that approaches should be more targeted and specific, with improved monitoring and reporting of progress .In autumn 2021, the Agricultural Action Plan was relaunched as the Agriculture and Land Use Alliance: https://www.agriland.co.uk/farming-news/new-agriculture-and-land-use-alliance-launches-countryside-cop/

The UKs decision to leave the EU has provided an opportunity to fundamentally rethink our approach to delivering agricultural decarbonisation through a radical departure from the Common Agricultural Policy. As such the Agricultural Action Plan will be less of a focus for agricultural decarbonisation moving forwards. Our Agricultural Transition Plan sets out the details of the new policy framework: This includes a move towards environmental land management schemes that pay farmers based on the delivery of public goods, rather than a single farm payment based on land area.

Defra will also develop a Farming for Net Zero resource, providing advice to farmers on good practice techniques to understand, manage and abate GHG emissions.

Question by New Zealand at Monday, 30 August 2021

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

Type: Before 31 August

Title: Agriculture

1. Does the UK have any sector specific reduction targets or ambitions relating to agricultural emissions, in addition to or under their economy-wide reduction target?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The UK Climate Change Act sets carbon budgets at a whole economy level. There are no specific targets for agriculture under the act. The UK Net Zero Strategy sets out specific policies and actions for agriculture, as well as an indication of the overall contribution of agriculture, forestry and other land use to meeting our carbon targets.

In autumn 2021, Defra will launch the Farming for Net Zero communications campaign, providing advice to farmers on good practice techniques to understand, manage and abate GHG emissions

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Question by New Zealand at Monday, 30 August 2021

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

Type: Before 31 August

Title: Carbon budgets

1. Since the UK's Clean Growth Strategy announcement, what additional policies are being considered to reduce the gap between projected emissions and the fourth and fifth carbon budgets?

2. New Zealand would be interested to understand what is the technical reasoning for carrying forward 88 MtCO2e of overperformance from the second budget period to the third budget?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The recently published Net Zero Strategy sets out a comprehensive and cross-sector approach to decarbonise the UK economy, including the action we will take to keep us on track for meeting carbon budgets and our 2030 NDC. This document now supersedes the 2017 Clean Growth Strategy.

Our plan draws on different scenarios for 2050 - finding that in all scenarios reaching net zero means extensive decarbonisation across transport, buildings and industry; increased energy and resource efficiency; and use of greenhouse gas removals (both natural and engineered),

given residual emissions in some ‘hard to decarbonise’ sectors.

Action is required on all fronts, our NZS sets out policies and proposals to: decarbonise the electricity grid by 2035, support hydrogen production through the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme, invest in CCUS through Phase 1 of the cluster sequencing process, and continue the successful roll out of EVs through introducing a zero emission vehicle mandate and further funding for EV infrastructure.In the past year, we have also published the Prime Minister’s Ten Point Plan for a Green Industrial Revolution, the Energy White Paper, the North Sea Transition Deal, the Industrial Decarbonisation Strategy, the Transport Decarbonisation Plan, the Hydrogen Strategy and most recently our Heat and Buildings Strategy.

On carry-over of overperformance

The Climate Change Act, which was passed with near-unanimous support, allows for the use of flexibilities such as using carbon credits or carrying forward over-achievement from one carbon budget to the next, to meet a carbon budget (subject to consultation with the devolved administrations and taking into account the advice of the Climate Change Committee).

In 2019 the UK decided to carry forward a fraction of the over-achievement from the second carbon budget (covering the years 2013-17) to the third, in light of greater than usual uncertainties from forthcoming changes to GHG emissions estimates – for example, new sources of emissions being included in the UK inventory, and an amendment to Global Warming Potentials applied (after the original setting of the carbon budget level). The UK Government at that time made clear that its intention was not to use the carry forward in order to contribute towards meeting Carbon Budget 3.

Question by Germany at Monday, 30 August 2021

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

Type: Before 31 August

Title: Gender-Differentiated Data

Did the United Kingdom of Great Britain and Northern Ireland integrate gender-differentiated data in the reporting? If so how and what challenges were identified for a meaningful reporting on climate action ?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The UK does not yet collect this data, but the UK is committed to implementation of the UNFCCC Gender Action Plan, including actions to enhance the collection, analysis and application of sex-disaggregated data and gender analysis. The UK is interested in improving sex-disaggregated data collection for future monitoring and reporting and will be hosting an event at the UK Pavilion on Gender Day in which practictioners and policymakers will share their best practice in integrating gender analysis and sex disaggregated data in monitoring and reporting.

Question by Germany at Friday, 20 August 2021

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

Type: Before 31 August

Title: GHG Emissions by gas for WEM scenario

Table 11a of the BR shows a slowdown in reductions for the years 2030 and 2035, compared to previous years. The WAM scenarios in Table 11b show slightly higher reductions.

In the view of the UK are more measures necessary to achieve net zero emissions by 2050?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The recently published Net Zero Strategy sets out a comprehensive and cross-sector approach to decarbonise the UK economy, including the action we will take to keep us on track for meeting carbon budgets and our 2030 NDC. This document now supersedes the 2017 Clean Growth Strategy.

Our plan draws on different scenarios for 2050 - finding that in all scenarios reaching net zero means extensive decarbonisation across transport, buildings and industry; increased energy and resource efficiency; and use of greenhouse gas removals (both natural and engineered), given residual emissions in some ‘hard to decarbonise’ sectors.

Action is required on all fronts. The NZS sets out policies and proposals to: decarbonise the electricity grid by 2035, support hydrogen production through the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme, invest in CCUS through Phase 1 of the cluster sequencing process, and continue the successful roll out of EVs through introducing

a zero emission vehicle mandate and further funding for EV infrastructure.

Question by Germany at Friday, 20 August 2021

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

Type: Before 31 August

Title: UK Government Target

The UK Government's Clean Growth Strategy (October 2017), states several key policies:

•€€€€€€€€ Accelerating clean growth;

•€€€€€€€€ Improving business and industry efficiency accounting for 17% of UK emissions;

•€€€€€€€€ Improving homes accounting for 15% of UK emissions;

•€€€€€€€€ Accelerating the Shift to Low Carbon Transport accounting for 27% of UK Emissions;

•€€€€€€€€ Delivering Clean, Smart, Flexible Power accounting for 24% of UK Emissions; and

•€€€€€€€€ Enhancing the Benefits and value of Natural Resources accounting for 14% of UK Emissions[32]

Which of these key policies is expected to have a leading role in meeting the fourth and fifth carbon budgets? Is there prioritization of any single policy over others?

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The recently published Net Zero Strategy sets out a comprehensive and cross-sector approach to decarbonise the UK economy, including the action we will take to keep us on track for meeting carbon budgets and our 2030 NDC. This document now supersedes the 2017 Clean Growth Strategy.

Examples of some key policies which will help us meet carbon budgets 4 and 5 include, but are not limited to: a zero emission vehicle mandate setting targets for a percentage of manufacturers' new car and van sales to be zero emission each year from 2024, supporting consumers wanting to install heat pumps through funding, such as the £450 million Boiler Upgrade Scheme providing £5,000 capital grants, providing favourable incentives and low-cost green finance, and supporting the installation of energy efficiency and on-site decarbonisation measures through the £315 million Industrial Energy Transformation Fund.

However, action is required across all fronts. Our plan draws on different scenarios for 2050 - finding that in all scenarios reaching net zero means extensive decarbonisation across transport, buildings and industry; increased energy and resource efficiency; and use of greenhouse gas removals (both natural and engineered), given residual emissions in some 'hard to decarbonise' sectors.

Question by Germany at Friday, 20 August 2021

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

Type: Before 31 August

Title: Institutional arragements for QA/QC

On page 28 of its BR the UK reports that in order to verify the emissions levels and trends reported in the GHG inventory, BEIS maintains a research programme of high-frequency, high-precision measurements of atmospheric trace gases at the Mace Head research station, in the Republic of Ireland.

How was the institutional arrangement for monitoring with the Mace Head Research Station programme developed? Were resources readily available or had to procured (and by whom?). Challenges and benefits of this verification process.

Answer by United Kingdom of Great Britain and Northern Ireland, Friday, 29 October 2021

The Mace Head site was refurbished as a research laboratory in 1985. In 1987 direct measurements of chlorofluorocarbons (CFCs) and other halocarbons commenced as part of a collaboration with the international Global Atmospheric Gases Experiment (GAGE), now the Advanced Global Atmospheric Gases Experiment (AGAGE), a global measurement network. Funding for the UK contribution to this research is provided through grants from the Department for Business, Energy and Industrial Strategy. The Mace Head site is also part of a network of sites used to verify the UK's inventory; BEIS currently outsources this service to Bristol University. Bristol undertake the measurements, and work with the Met Office to interpret the results.

The main challenges in running the atmospheric measurement network include the selection and suitability of new sites in terms of height of the measurement, and thus sensitivity to the surface emissions, along with access, security, power and maintaining the equipment and inter-calibration and quality of the measurements across the network. Converting the measurements into a usable emission estimate for the UK requires a sophisticated computer modelling system, which has undergone continuous development. The geographical and

temporal resolution of the emission estimates is dependent on the number and geographical spread of the emissions and the available measurements and thus varies by gas.

The benefit of verification using atmospheric measurements and inverse modelling is that it provides an independent method for validating emissions estimates in the inventory and helps inform inventory improvements. For example, in the UK inventory, verification has been used to improve the estimation of N2O emissions from adipic/nitric acid production. Inventory and model comparisons have also led to improvements to the estimation of HFC-134a emissions from mobile air conditioning units. Atmospheric modelling of these emissions showed that the inventory was overestimating emission releases and this resulted in a re-evaluation of the parameters used in the inventory calculations.

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