

Government Response to the Climate Change Committee

Progress in Reducing Emissions - 2021 Report to Parliament

Presented to Parliament pursuant to
Section 37 of the Climate Change Act 2008

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Government Response to the CCC 2021 Progress Report

UK government introduction

1. We welcome the Climate Change Committee's (CCC) 2021 *Progress in Reducing Emissions* reportⁱ, which highlights the successes of the government in setting an ambitious climate mitigation agenda, whilst also providing healthy challenge to our progress to net zero by 2050. It correctly emphasises that the journey to net zero is not yet half completed, and that this is the decisive decade for tackling climate change which Global Britain must take a leading role in.
2. We need to act urgently across the whole of society and influence global action wherever possible. The future impacts of climate change depend upon how much we can limit the rising global temperature. Meeting the temperature goal of the 2015 Paris Agreement would mean we are less exposed to flood and heat risks; and able to preserve our national security, our prosperity, and our natural world.
3. It is within this context that we have led internationally this year in the race to net zero. We have made clear, tangible progress. For example, with record investment in wind power, a new UK Emissions Trading Scheme, £5.2 billion investment in flood and sea defences, clear plans to decarbonise heavy industry and North Sea oil and gas production, and businesses pledging to become net zero by 2050 or earlier.
4. As host, we played a central role in agreeing important commitments

across the G7 Summit nations, including strengthening international public climate finance, up to \$2 billion to accelerate the transition away from coal to renewable energy, and to accelerate the transition away from new sales of diesel and petrol cars.

5. Following the *Ten Point Plan*, we have also published multiple ground-breaking sector strategies that have set out the very policies that the CCC is calling for to deliver on our ambition. The *Energy White Paper*ⁱⁱ, *Transport Decarbonisation Plan*ⁱⁱⁱ, *Hydrogen Strategy*^{iv}, and *Industrial Decarbonisation Strategy*^v set out detailed action required in the 2020s to ensure each sector is on track to meet their contributions to carbon budgets and net zero by 2050. Finally, the UK government's *Net Zero Strategy* published alongside this response, presents an economy-wide perspective on the route to net zero.

The response

6. The departmental and devolved administration responses to the CCC's joint recommendations (which sit at the end of the 2021 progress report), alongside the *Net Zero Strategy* that this is annexed to, make up the response to the 2021 progress report.^{vi}
7. Responses to the 2021 joint recommendations detail the actions that are being taken across different UK Government departments and the Devolved Administrations, as well as outlining next steps in specific areas. They provide a clearer picture of the broad spectrum of efforts that are required

across the UK economy to decarbonise by 2050.

8. The UK Government's *Net Zero Strategy* sets out a vision for a net zero economy and includes an array of new policies and proposals to facilitate the transition. In doing so, it addresses several of the CCC's joint recommendations and supplements this annex.
9. The adaptation-specific recommendations that the CCC included in their joint recommendations have been removed and are instead addressed in Defra's standalone response to the CCC's 2021 *Progress Report on Adapting to Climate Change*^{vii}.
10. Departments have worked closely to develop shared responses to recommendations that cover mitigation and adaptation. Policies supporting net zero should be made resilient to current and future climate change risks, to prevent locking in future vulnerabilities, unintended consequences, and maladaptation. For example, we must consider the impact that climate change will have on the suitability of our land for different uses, and resilience to weather extremes must be built into the energy systems and infrastructure which will support net zero.
11. The latest Scottish emissions data^{viii}, published in June 2021, shows that on the statutory reporting basis set out in Scotland's legislation, emissions during 2019 were down by 51.5% since the 1990/1995 baseline and therefore, over halfway to net zero. Since 2019, there has however, been a step change in Scottish Government action. The 2018 *Climate Change Plan* was updated in December 2020^{ix} setting out an ambitious emissions reduction pathway to 2032, including a 75% reduction by 2030. The Scottish Government is now focussed on delivering the updated plan with nearly 150 new and boosted policies to accelerate progress, supported by a record £1.9 billion of capital funding in the 2021/22 Scottish Budget. The Scottish Government reports annually to the Scottish Parliament on progress towards the delivery of climate change plans^x, and through evaluating, updating, and adapting the latest plan, the Scottish Government will track progress and capture the opportunities of the transition to net zero emissions. In addition, resilience to the locked-in impacts of climate change will continue to be built through

Action in the Devolved Administrations

Scotland

11. Scotland has its own distinctive statutory framework for climate change action under the *Climate Change (Scotland) Act 2009* and the *Climate Change (Emissions Reduction Targets) (Scotland) Act 2019*. The framework includes

Scotland's statutory adaptation programme for the period to 2024.^{xi}

13. The CCC's 2020 UK progress report called upon the Scottish Government to set out firm policies and an implementation plan to reduce greenhouse gas emissions in agriculture. The updated climate change plan details a high-level route map to transform Scottish agriculture to enable farming to continue sustainably – producing high quality food, reducing carbon emissions, delivering wider environmental benefits, and ensuring appropriate land use to meet climate change targets. This included a commitment to introducing environmental conditionality in 2021 to extend requirements to all farmers and crofters to undertake environmental actions.
14. In advance of COP26 in Glasgow, the Scottish Government published *Scotland's Contribution to the Paris Agreement*^{xii}: an indicative nationally determined contribution demonstrating how Scotland is contributing, including through the targets and strategies mentioned above, to the goals of the Paris Agreement.

Wales

15. Earlier this year the Senedd agreed to revise Wales' statutory climate targets in line with the CCC recommendations in their December 2020 advice.^{xiii} The revised targets include a 37% average reduction over carbon budget 2 (2021-25)^{xiv}; a 58% average reduction over carbon budget 3 (2026-30); and 63%, 89% and 100% (net zero) in 2030, 2040, and 2050 respectively.

16. The Welsh Government also published two major strategies in March 2021. *Llwybr Newydd: the Wales Transport Strategy*^{xv} established a 20 year vision for an accessible, sustainable, and efficient transport system and embeds the principle of a sustainable transport hierarchy to guide decisions about new infrastructure. The Welsh Government's vision presented in the *Electric Vehicle Charging Strategy for Wales*^{xvi} is that, by 2025, all users of electric cars and vans are confident they can access charging infrastructure when needed. Other key developments in the last year include announcing a 37% reduction in carbon emissions for new dwellings,^{xvii} and publishing a reporting guide^{xviii} and route map^{xix} for the public sector to reach net zero by 2030.
17. The Welsh Government will publish a plan for achieving Carbon Budget 2 before COP26. The plan will also look beyond 2025 to strengthen the foundations for Carbon Budget 3 and the 2030 target, as well as net zero in 2050.

Northern Ireland

18. Two climate change bills: An Executive Climate Change Bill, introduced by the Northern Ireland Executive, and a Private Members' Climate Change Bill are concurrently progressing through the Northern Ireland Assembly. The two bills take different policy approaches and set different targets for greenhouse gas emissions reductions. It remains to be seen how a Northern Ireland Climate Change Act will be shaped from either or both these bills, but the aim is to have climate change legislation for Northern Ireland passed by the assembly by the end of the mandate (March 2022).

19. The Department for Agriculture, Environment and Rural Affairs is leading the development of the Green Growth Strategy across government and in partnership with local government, business, voluntary, and community sectors. This overarching strategy will be supplemented by a series of climate action plans to help Northern Ireland transition to net zero by 2050, protect and enhance our environment, and deliver sustainable economic growth. The development of the strategy across government is being supported by CCC advice on sectoral pathways and targets. A draft Green Growth Strategy will be published for consultation before COP26 and a final version and first Climate Action Plan by the end of March 2022.
20. Following consultation, the department also intends to publish Northern Ireland's first environmental strategy later in 2021, providing the basis for intervention that can improve and protect the quality of the environment, improve health and wellbeing of citizens, and create economic opportunities. The department is also consulting on a draft Peatlands Strategy for Northern Ireland to reflect commitments in the IUCN's (International Union for the Conservation of Nature) *UK Peatland Strategy*.^{xx} This will provide a framework for conserving our intact semi-natural peatlands and restoring those that have degraded.
21. The Department for the Economy published a detailed consultation on policy options for a new Northern Ireland Energy Strategy in March 2021. The proposed vision for the strategy is 'net zero carbon and affordable energy by 2050'. Subject to Northern Ireland Executive approval and incorporating consultation responses, a new energy strategy will be published later in 2021. This will focus on key outcomes, targets, and decisions to 2030 as part of the long-term pathway to decarbonising energy by 2050. It will also contribute to the *10X Economy*^{xxi} vision and will complement wider Northern Ireland strategies under development including the Green Growth Strategy, Skills Strategy, and Circular Economy Strategy. Further consultations on specific energy policies will follow the Energy Strategy to deliver on its vision.

Response to the Climate Change Committee's Joint Recommendations

Central government departments:

- **Table A1:** Cabinet Office and Number 10
- **Table A2:** COP Unit, the Foreign, Commonwealth and Development Office (FCDO) and the Department for International Trade (DIT)
- **Table A3:** HM Treasury (HMT)
- **Table A4:** Department for Business, Energy and Industrial Strategy (BEIS)
- **Table A5:** Department for Environment, Food and Rural Affairs (Defra)
- **Table A6:** Department for Transport (DfT)
- **Table A7:** Department for Levelling Up, Housing and Communities (DLUHC)
- **Table A8:** Department for Digital, Culture, Media and Sport (DCMS)
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Regulators and the Office for National Statistics:

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- **Table A17:** Office for National Statistics (ONS)

Devolved administrations:

- **Table A18:** The Scottish Government
- **Table A19:** The Welsh Government
- **Table A20:** The Northern Ireland Executive

Table A1

Recommendations for Number 10 and Cabinet Office	Response
<p>Crosscutting Commit to a 'Net Zero Test' to ensure that all Government decisions are compatible with the legislated emissions targets.</p>	<p>We have gone further than ever before to put the climate at the heart of our decision-making, including:</p> <ul style="list-style-type: none"> • establishing two cabinet committees dedicated to climate change; • announcing through the Integrated Review of Security, Defence, Development and Foreign Policy that tackling climate change and biodiversity loss will be the government's number one international priority; • using the Environment Bill to require the government to reflect environmental issues in national policymaking through consideration of five environmental principles^{xxii}; • taking new approaches to embed net zero in spending decisions; • establishing the No.10 Delivery Unit to ensure the government maintains a sharp focus on delivering the country's key priorities. One of the four priorities for this Unit is the delivery of net zero; and <p>in collaboration with key net zero delivery departments, BEIS set out its high level strategy for delivering on the UK's net zero commitments through the <i>BEIS Outcome Delivery Plan 2021-2022</i>. This plan identified key programmes critical to delivery and set out an evaluation plan to monitor and assess progress.</p>
<p>Use the Cabinet Committees on Climate Strategy and Climate Action to drive home the need for more pace in policy development across Departments. Consider whether additional</p>	<p>The PM-chaired Climate Action Strategy Committee (CAS) determines the UK's overarching climate strategy, both domestically and internationally. The Climate Action Implementation Committee (CAI), chaired by the COP President Designate, considers matters relating</p>

governance mechanisms such as independent delivery bodies are required in particular areas, such as heat decarbonisation.

to the delivery of COP26, net zero and building the United Kingdom's resilience to climate impacts.

These cabinet committees are supported by an official-level climate governance group. This group ensures a whole-of-government approach to climate policy, with oversight at the most senior official levels. It brings together the full range of domestic and international policy areas that impact or are impacted by climate. The group's meeting agendas are strategic and driven by a comprehensive forward look of climate-related policies and publications.

Develop (with BEIS) a **public engagement strategy** for Net Zero which builds on the findings of the UK Climate Assembly by involving people in decision-making, providing trusted information on decarbonisation choices and the need to reduce emissions and adapt to climate change. The strategy should also identify preferred policy options to empower people to contribute fully towards the path to Net Zero.

Answered in A4

Support **local government** (with DLUHC) to play a full role in the Net Zero transition, including through increased resourcing, guidance, involvement in local area energy plans, statutory reporting on the emissions from their estate and reforming the planning framework to enable delivery of low-carbon and climate-resilient measures. This is likely to require additional funding for

Government recognises that local authorities can, and do, play an essential role in driving local net zero action. We understand that national governments also have a crucial role to play in building on current work to effectively support local areas to deliver national net zero ambitions.

Local authorities have been supported by central government through the Local Energy Programme that provides support to Local Enterprise Partnerships (LEPs), local authorities and

staffing and resources for local delivery plans, alongside a 'duty to collaborate' to encourage authorities to work with local, regional and national partners to deliver their climate ambitions.

communities in England to play a leading role in decarbonisation and clean growth. The programme was set up by BEIS in 2017 as part of the *Clean Growth Strategy*^{xxiii}, since then almost £22 million has been invested in the Local Energy programme. It has funded a range of measures designed to build local capacity and capability and encourage joined up working between local areas, investors and central government.

The Local Climate Action chapter in the *Net Zero Strategy* sets out specific details of the action we will take to further enable local government to reach net zero.

Review **guidance documents** used in policy and business case development (e.g. the Green Book) and ensure these are consistent with the requirements of Net Zero and account for the impacts of climate change.

The *Green Book*^{xxiv} and its supplementary guidance is continuously updated so it reflects latest evidence. BEIS recently updated carbon values to reflect the latest evidence, targets and wider context.

Achieving net zero is both a policy objective and a legal requirement and is considered in the existing *Green Book* methodology. As part of the economic case, the *Green Book* also requires an assessment of environmental costs and benefits to objectively advise decisionmakers about these impacts.

The *Green Book supplementary guidance on accounting for the effects of climate change*^{xxv} supports the appraisal of climate risks and the necessary adaptation of policies, programmes and projects to include climate resilience and consider flexibility in decision making. Taking account of these effects is a requirement of public policies.

Ensure all departmental policy decisions, and procurement decisions, are consistent with the **Net Zero goal** and reflect the latest understanding of **climate risks**.

In the last two years the government has made important commitments to significantly strengthen the governance for net zero and climate adaptation. Net zero and adaptation are at the heart of government decision-making and this is driven, first and foremost, by the Prime Minister. Two Cabinet committees were established in 2020. The Prime Minister chairs the Climate Action Strategy Committee which considers matters relating to the delivery of the UK's domestic and international climate strategy. The COP26 President Designate chairs the Climate Action Implementation Committee which considers matters relating to the delivery of COP26, net zero and building the UK's resilience to climate impacts.

With regards to policy decisions, the *Green Book* sets out guidance on how to appraise policies, programmes and projects, to help public servants give objective advice to decision makers. Achieving net zero is both a policy objective and a legal requirement and is already considered in the existing *Green Book* methodology, alongside climate change adaptation. When setting out the strategic case for a policy, achieving net zero is regarded as an objective for any relevant proposals and as a legal constraint on all proposals. Also, as part of the economic case, the *Green Book* requires an assessment of environmental costs and benefits to objectively advise decision makers about these impacts.

As for procurement, the Government Commercial Function has developed a new commercial policy measure for all central government departments, executive agencies, and non-departmental public bodies, which came into effect for new major

procurements published after 30 September 2021.

This is the first measure globally which will deselect suppliers for failing to commit to achieving net zero by 2050, and will have a significant impact upon the behaviour and pace of carbon reduction in the government's supply chain and the economy as a whole. The measure supports a number of key government priorities including building back better the green recovery; and demonstrates that the UK is leading the way on environmental considerations in advance of the COP26 summit in Glasgow.

Develop and implement fully-funded plans towards making all **public buildings and vehicle fleets** zero-carbon in the long term. This must include a move to multi-year programmatic funding to deliver the stated ambitions of switching to ultra-low emission vehicles by 2030 and to halve emissions from public buildings by 2032, supported by cross-government strategy (including an ambitious new set of Greening the Government commitments) and capital funding levels in the order of £1 billion/year for buildings.

As part of the *Transport Decarbonisation Plan*, government increased the level of ambition on its own vehicle fleet electrification and committed to 100% of the government car and van fleet to be fully zero emissions at the tailpipe, by 31 December 2027. This accelerates the target by three years from 2030, strengthens the ambition level from ultra-low emission (ULEV) to zero emission (ZEV), and widens the scope by including vans for the first time. The interim target of 25% ultra-low emission cars by 2022 remains.

It is for each government department and their associated bodies to deliver on this target, planning how it should be approached and securing and prioritising budgets in the usual way. Public sector organisations can access vehicle and chargepoint grants provided by the Office for Zero Emission Vehicles.

The government remains committed to its manifesto pledge to invest £9.2 billion in the energy efficiency of homes, schools, and hospitals, helping to decarbonise buildings to

keep us on track to reach net zero emissions by 2050.

We also continue to provide support so that organisations that lack the expertise and skills that are required to identify, develop, and deliver decarbonisation projects can access those skills, having launched on the 28 July 2021 a second phase of the Public Sector Low Carbon Skill Fund which makes available £15 million in this financial year for this purpose, building on the success of the first phase.

Public sector decarbonisation remains an important part of our strategic approach to delivering net zero, and the public sector must make an important contribution both by reducing its own emissions and showing leadership, as set out in the *Net Zero Strategy* and *Heat and Buildings Strategy*.

As the public sector, lead the shift to other positive behaviours that **reduce travel demand**, for example encouraging home-working.

The UK government is committed to leading by example on pro-environmental behaviours and has ambitious and stretching targets to reduce the environmental impact of its operations, including travel. These are set out in the *Greening Government Commitments* (GGCs), which require departments to report publicly on their actions that have an environmental impact.

The COVID-19 pandemic has meant people have had to change the way they live, work, and travel. We will look to take these and other changes into account as we revise the GGC targets in the future.

Work is taking place across government to set new GGC targets for 2021-25. The new framework will ensure the public estate continues to reduce its environmental footprint, align with commitments in our 25 Year Environment Plan and be consistent with a trajectory to achieving net zero greenhouse gas emissions by 2050. The new commitments are due to be published in 2021.

International (With BEIS and the COP Unit)

Work towards securing more **climate finance commitments** from developed countries to get back on track for mobilising \$100 billion a year in climate finance as soon as possible.

The government is committed to working with developed countries to meet the \$100 billion per year climate finance goal. The UK has committed to double our International Climate Finance (ICF) to at least £11.6 billion between 2021 and 2025, which represents only a small part of the significant sum it will mobilise. The Chancellor of the Exchequer has made securing more ambitious international climate finance commitments a priority within the G7 Finance Track. At the G7 meetings in June 2021, finance ministers committed to increase and improve climate finance contributions through to 2025, including increasing adaptation finance and finance for nature-based solutions. International

Climate Finance remains a strong priority for the Prime Minister as part of the UK's COP26 Finance Campaign, and we are asking all donor countries to come forward with ambitious climate finance commitments ahead of COP26.

Work to bring forward additional **emissions reduction ambition** from countries that haven't yet strengthened commitments ahead of COP26.

One of our four COP26 goals is driving down global emissions and ensuring we limit the temperature increase to 1.5°C above pre-industrial levels. Through pushing for increased ambition in nationally determined contributions (NDCs), and long term strategies (LTS) with pathways to net zero emissions from all countries and particularly major economies, we aim to strengthen global action ahead of COP26, in line with the latest science.

So far, we have seen a total of 88 NDC submissions to the United Nations Framework Convention on Climate Change (UNFCCC) (covering 115 Parties including the EU and its 27 Member States), representing around 53% of global emissions, and 70% of the global economy have committed to net zero targets. However, much more needs to be done, and we continue to urge all parties that have not already done so to raise their ambition ahead of COP26 in order to keep 1.5°C within reach.

As the incoming COP26 Presidency, we have made this a top foreign policy priority in which the Prime Minister and all ministers are engaged. We have utilised our entire diplomatic network and have been working through multilateral fora, such as the G7 and G20, to make the case for increased climate ambition around the world, particularly from major emitters. We are also working with a range of organisations to provide support to countries to develop their climate plans and

Place aligning **global COVID-19 recovery plans** with the goals of the Paris Agreement as a core goal of the UK's G7 and upcoming COP26 presidencies.

policies. COP President Designate Alok Sharma has met with a number of leaders to push for increased climate ambition.

Ensuring a green, inclusive and resilient recovery from COVID-19 has underpinned both the UK's COP26 and G7 Presidencies this year.

At COP26 we must seize this once in a generation opportunity to get the world on track to achieve the Paris finance goal, making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. The Prime Minister and the COP President Designate have been clear that a global green recovery from COVID-19 presents an opportunity to build back a better, more sustainable, and resilient world, and to keep the goal of 1.5°C alive. Through our upcoming COP Presidency we have been encouraging countries and development banks to seize the opportunity to develop green recovery plans that deliver for both the economy and the planet.

Building back better has been the overarching theme of the UK's G7 Presidency. In July, the Prime Minister brought the world's leading democracies together to reach major new agreements to help the world fight and build back better from COVID-19, creating a greener, more prosperous future. The summit included commitments to put climate change, biodiversity and the environment at the heart of worldwide COVID-19 recovery. G7 finance ministers and central bank governors have committed to sustain policy support as long as necessary and invest to promote growth, create high-quality jobs and address climate change. They have stressed the need to ensure the long-term sustainability of public finances to

enable us to respond to future crises and address longer-term structural challenges, including for the benefit of future generations.

Ensure that any outcome on **international carbon markets** at COP26 has high integrity and genuinely supports global ambition to tackle climate change.

As the upcoming Presidency of COP26, the UK is fully committed to reaching a successful outcome on Article 6 at COP26. Article 6 is a fundamental element of the Paris Agreement, enabling Parties to cooperate to achieve higher ambition in both adaptation and mitigation actions. We will build on the good progress made at COP25 in Madrid, working with all Parties towards a successful outcome in Glasgow.

Develop the option of applying either **border carbon tariffs or minimum standards to imports** of selected embedded-emission-intensive industrial and agricultural products and fuels. This should include initiating development of carbon intensity measurement standards and fostering international consensus around trade policies through the G7 and upcoming COP presidencies.

We recognise the importance of addressing the risk of carbon leakage. The Net Zero Review sets out potential approaches, including, but not limited to, Carbon Border Adjustment Mechanisms and product standards. We will provide a further assessment on potential options in due course. In the *Industrial Decarbonisation Strategy* we committed to develop proposals for voluntary product standards and product labelling, and to use public procurement initiatives, which could address carbon leakage. We are also committed to reviewing our approach to free allocation of UK Emissions Trading Scheme (ETS) allowances.

The G7 leaders recognised the value of policies to price carbon and will work collaboratively on carbon leakage. They also committed to launch the Industrial Decarbonisation Agenda to drive market growth for green industrial products, via measures like low-carbon product standards and green public procurement. This is in line with the UK and India-led Industrial Deep Decarbonisation Initiative, to harmonise embodied emissions reporting, procurement rules and standard setting.

Table A2

<p>Recommendations for the COP Unit, the Foreign, Commonwealth and Development Office (FCDO) and the Department for International Trade (DIT)</p>	<p>Response</p>	
<p>Action in the run-up to COP26</p>	<p>Work towards securing more climate finance commitments from developed countries to get back on track for mobilising \$100 billion a year in climate finance as soon as possible.</p>	<p>The government is committed to working with developed countries to meet the \$100 billion per year climate finance goal. The UK has committed to double our International Climate Finance (ICF) to at least £11.6 billion between 2021 and 2025, which represents only a small part of the significant sum it will mobilise. The Chancellor of the Exchequer has made securing more ambitious international climate finance commitments a priority within the G7 Finance Track. At the G7 meetings in June, finance ministers committed to increase and improve climate finance contributions through to 2025, including increasing adaptation finance and finance for nature-based solutions. International Climate Finance remains a strong priority for the Prime Minister as part of the UK's COP26 Finance Campaign, and we are asking all donor countries to come forward with ambitious climate finance commitments ahead of COP26.</p>
<p>Work to bring forward additional emissions reduction ambition from countries that haven't yet strengthened commitments ahead of COP26.</p>	<p>Answered in A1</p>	
<p>Provide a clear commitment prior to COP26 regarding the timescale by which the UK's official development assistance (ODA) contribution will return to 0.7% of GNI</p>	<p>The government remains committed to international development and reaching the global goals of the Paris Agreement. The UK will remain one of the leading development donors in the world, providing £10 billion this year towards our key international development priorities including</p>	

given the UK's commitment to align its ODA spend with Paris Agreement requirements and the need for increased finance to achieve the Paris Agreement.

poverty reduction, climate change, and global health security. The Chancellor recently set out the responsible fiscal circumstances under which the government will return to 0.7%: when the independent Office for Budget Responsibility's fiscal forecast confirms that, on a sustainable basis, the government is not borrowing for day-to-day spending and underlying debt is falling.

Place aligning **global COVID-19 recovery** plans with the goals of the Paris Agreement as a core goal of the UK's G7 and COP26 presidencies.

Answered in A1

Ensure that any outcome on **international carbon markets** at COP26 has high integrity and genuinely supports global ambition to tackle climate change.

Answered in A1

Develop the option of applying either **border carbon tariffs or minimum standards to imports** of selected embedded-emission-intensive industrial and agricultural products and fuels. This should include initiating development of carbon intensity measurement standards and fostering international consensus around trade policies through the G7 and COP presidencies.

Answered in A1

Publish a new strategy for the UK's **international climate policy** for after COP26 - ensuring that the initiatives for the COP26 presidency have long-term benefits for global emissions over the coming

The government is preparing a strategic framework setting out how the UK's international climate and nature activity can continue to drive ambition globally in the decade after COP26. This framework will be published in 2022 and will include reference to further work on the COP

decade and supports the implementation of policies to deliver on strengthened national targets.

initiatives. It will draw on the *Net Zero Strategy* and on decisions made at COP26.

DIT should use trade policy to **encourage increased ambition** on both climate change mitigation and adaptation in other countries, including considering the role for border carbon adjustments and standards to **prevent carbon leakage**.

UK trade policy plays an important role in supporting climate diplomacy. The UK has already liberalised most-favoured-nation (MFN) tariffs on over 100 green goods and is seeking to further climate interests in free trade agreements (FTAs) by liberalising environmental goods and services, maintaining the UK's right to regulate and enhancing environmental cooperation in biodiversity, forestry, and sustainable supply chains.

Trade policy can also support addressing carbon leakage risks. Multilaterally, the UK is showcasing its domestic carbon pricing scheme (UK ETS) and the potential for carbon pricing to cost-efficiently reduce emissions, drive innovation and support net zero. The *Net Zero Review* sets out further approaches for consideration, including Carbon Border Adjustment Mechanisms and product standards. In the *Industrial Decarbonisation Strategy* we committed to develop proposals on voluntary product standards, alongside labelling. As the Trade Secretary told G7 counterparts, any UK measures would comply with international obligations and specific needs of least developed countries.

We will use our multilateral fora to galvanise international partners to adopt climate-ambitious trade policy, and to promote global trade rules that are aligned to net zero and the Paris Agreement, for example through the WTO committees and the new Trade and Environmental Sustainability Structured Discussions.

Table A3

Recommendations for the HM Treasury (HMT)	Response
<p>Crosscutting Complete the overdue Net Zero Review, which should:</p> <ul style="list-style-type: none"> • Develop a plan for funding decarbonisation fairly, reviewing the distribution of costs for businesses, households and the Exchequer. • Set approach to near-term and long-term decarbonisation funding needs. • Consider policy implications for a just transition. 	<p>The <i>Net Zero Review</i> final report is published alongside the <i>Net Zero Strategy</i>. It is an analytical report using existing data to explore the key issues and trade-offs as the UK decarbonises.</p> <p>Against a backdrop of significant uncertainty on technology and costs, as well as changes to the economy over the next 30 years, it highlights the essential role of competitive markets in driving a low cost transition; discusses the importance of innovation and maintaining technology optionality over this decade; and, focuses on the potential exposure of households and sectors to the transition, highlighting factors to be taken into account in designing policy that will allocate costs during the transition.</p> <p>The <i>Net Zero Review</i> is just one step in the journey towards decarbonisation. It forms part of a cross-government effort to set the UK on a path to achieving net zero, alongside the <i>Net Zero Strategy</i> and sector strategies, which set out further detail on specific policies.</p>
<p>The spending review(s) should ensure departments are fully equipped to deliver the necessary actions across climate change mitigation and adaptation, during the rest of this Parliament and beyond.</p>	<p>Ensuring spending decisions contribute to net zero is a major priority for HM Treasury (HMT). The <i>Green Book</i> already mandates the consideration of climate and environmental impacts in spending. It has also been updated so that policies must be developed and assessed against how well they deliver on the government’s long-term policy aims such as net zero. The <i>Green Book</i> directs users to the Climate Change Risk Assessment (CCRA) to consider current and potential future climate risks and</p>

		<p>vulnerability to risks of an intervention. At Spending Review 2020 (SR20), guidance required departments to include the greenhouse gas emissions of bids, and their impact on meeting carbon budgets and net zero. HMT has reviewed the learning from this exercise to further embed net zero in spending decisions at Spending Review 2021 (SR21) and in the long term. More detail on the government’s approach to embedding net zero in all policy decisions will be set out in the <i>Net Zero Strategy</i>.</p>
	<p>Ensure all departmental policy decisions, and procurement decisions, are consistent with the Net Zero goal and reflect the latest understanding of climate risks.</p>	<p>Answered in A1</p>
<p>Funding</p>	<p>Increase resources for local government to play a full role in the Net Zero transition.</p>	<p>The government recognises the important role local authorities (LAs) have to play in the transition to net zero. Local authorities receive substantial funding from government which enables them to contribute towards the net zero transition. The Spending Review 2020 settlement for local government provided local authorities with an estimated 4.6% increase in core spending power (CSP) in 2021 to 2022. This followed the largest real terms increase in CSP for a decade at Spending Review 2019.</p> <p>The government also makes affordable loans to local authorities through the Public Works Loan Board to fund capital investment in net zero infrastructure, improvements in the energy efficiency of local housing stocks, and the delivery of a wide range of innovative local carbon reduction schemes. Furthermore, at the last budget the Chancellor announced the creation of the UK</p>

Infrastructure Bank. The bank will provide £4 billion of even cheaper lending, alongside an advisory function which will be available to support local authority investment in net zero and local growth.

Fund plans towards making all **public buildings and vehicle fleets** zero carbon in the long term. This must include a move to multi-year programmatic funding to deliver the stated ambitions of switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032, supported by cross-government strategy (including an updated set of Greening the Government commitments) and capital funding levels in the order of £1 billion/year for buildings.

Answered in A1

Provide a clear commitment prior to COP26 regarding the timescale by which the **UK's official development assistance (ODA) contribution** will return to 0.7% of GNI given the UK's commitment to align its ODA spend with Paris Agreement requirements and the need for increased finance to achieve the Paris Agreement.

Answered in A2

Establish mechanisms (with BEIS) to close the substantial funding gap for **heat networks**, with a

The government recognises the significant upfront investment required to enable heat networks to become thriving commercial

	<p>multi-year funding programme needed of sufficient scale to deliver the growth in network deployment, and transition to low carbon heat sources.</p>	<p>propositions. The creation of the £270 million Green Heat Network Fund announced at March 2020 Budget, will be a key source of funding to support the market transition to low carbon heat networks at scale, opening in April 2022 and running until 2025. A £10 million transition scheme to help potential applicants with commercialisation costs in preparation for the main fund was opened for applications in July 2021.</p>
<p>Taxation, carbon and energy pricing</p>	<p>Work with BEIS on the Heat and Buildings Strategy: to ensure that relative prices favour a shift to low carbon technologies, consulting widely including with the Committee on Fuel Poverty; to ensure that sufficient funding is available; and to consider the role of tax incentives (e.g. Stamp Duty differentials). Work with DLUHC and the new buildings safety regulator to ensure that local authorities are properly funded to enforce buildings standards.</p>	<p>The <i>Net Zero Strategy</i> and complementary <i>Heat and Building Strategy</i> sets out our policy proposals to drive the decarbonisation of the UK buildings stock. The Spending Review 2021 has made £2.2 billion available to support households in the transition, and the consultations published alongside the <i>Heat and Buildings Strategy</i> allow for a full consultation with industry, consumers, and representative bodies.</p>
	<p>Consult on reforms to electricity pricing to remove disincentives to electrification, based on consideration of the strategic and fair allocation of legacy policy costs associated with the past deployment of less-mature low carbon electricity generation. Also consider the balance of existing taxes, such as the Climate Change Levy, on different energy sources. These reforms in combination with wider sectoral</p>	<p>The government will work across the sector to identify existing distortions in the system and gain insights into the trade-offs involved in the distribution of energy costs. This will allow us to take decisions on how energy costs can be allocated in a way which is fair and incentivises cost-effective decarbonisation.</p>

incentives, standards and carbon pricing should remove price barriers to electrification.

Consult (with BEIS) on the introduction of a **carbon tax** (either as part of the UK ETS or a separate instrument) aimed at curbing rising emissions from Energy from Waste.

The UK government keeps all taxes under review. We have also committed to consider the case for expanding the UK Emissions Trading Scheme. We will continue to assess the best mechanisms to support decarbonisation of the Energy from Waste sector, while ensuring the waste hierarchy is maintained.

Reform **Vehicle Excise Duty**, with larger differentials across all vehicle types, to provide stronger incentives to purchase zero emission vehicles and reverse the shift towards cars that have higher lifecycle emissions. The reforms should consider the impact and design of second and subsequent year rates, to ensure they encourage the purchase of zero emission vehicles in the second-hand market.

The government uses the tax system to encourage the uptake of cars with low carbon dioxide emissions to help meet the UK's legally binding climate change targets. Therefore, zero emission cars and electric vans are liable to pay no Vehicle Excise Duty (VED). The government published a call for evidence on VED in 2020, including on how to strengthen the environmental incentives of VED, and will set out next steps in due course once it has considered the responses in detail.

Aviation tax reform should seek to address price imbalances between aviation and surface transport, encouraging the low carbon alternative (e.g. rail) for journeys where one exists. Taxation should also be used, alongside improvements in broadband, to embed positive behaviours that have arisen during the pandemic (e.g. replacing business travel with videoconferencing and online collaboration).

The government recently consulted on aviation tax reform. We are currently considering responses to the consultation in detail and will update on timing in due course.

The Department for Transport recently published a consultation on the government's strategy for net zero aviation, which set out the overarching principles through which the government would achieve emissions reductions in the sector, namely: (1) committing to net zero aviation by 2050, while being flexible over the pathway to achieve it; (2) being an international leader on tackling global emissions from the

sector; (3) working in partnership with industry.

Create a clear incentive for manufacturing facilities not currently covered by the UK ETS to switch to low carbon energy sources by reforming the suite of energy and carbon policies, which could include rebalancing the **Climate Change Levy** rates for electricity and gas.

Budget 2016 announced our intention to rebalance Climate Change Levy main rates for gas and electricity by 2025, to reflect that electricity is becoming a greener source of energy than gas.

The UK ETS will allow us to expand carbon pricing across new sectors of the economy. We have committed to exploring expanding the UK ETS to the two thirds of uncovered emissions and we will provide a further update in due course.

Set out a clear plan for ensuring that carbon prices and taxes on manufacturers, energy producers and aviation encourage emissions reductions in line with the CCC Pathway, planning for revised (and likely higher) carbon prices from 2023. This should include setting out a **cap for the UK ETS** consistent with a credible path to the sixth carbon budget for consultation by Q3 2021.

The UK ETS will be the world's first net zero cap and trade market. We are taking the opportunity to develop a scheme with greater ambition; for example, we have reduced the cap on emissions allowances by 5% from the UK's expected share of the EU ETS cap. We will also be consulting on setting a net zero-consistent cap trajectory in the coming months.

Develop (with DIT) the option of applying either **border carbon tariffs or minimum standards to imports** of selected embedded-emission-intensive industrial and agricultural products and fuels. This should include initiating development of carbon intensity measurement standards and fostering international consensus around trade

Answered in A1

	<p>policies through the G7 and COP presidencies.</p>	
<p>Green finance</p>	<p>Develop further ways to embed net zero and climate risk in financial decisions by UK firms, building on the UK's Green Finance Strategy. This should include implementing mandatory climate disclosure, adoption of a robust green taxonomy with clear guidance on how it should be used. It should also consider the recommendations of the Committee's Finance Advisory Group, such as making net zero and adaptation plans mandatory for financial institutions and monitoring financial flows into climate action.</p>	<p>In his Mansion House speech, the Chancellor of the Exchequer announced plans to introduce economy-wide Sustainability Disclosure Requirements (SDR) for businesses and investment products. The SDR will ensure that firms report on their impact on climate and the environment – and the risks/opportunities these pose to their business. It builds on and streamlines existing sustainability reporting requirements such as our commitment to economy-wide Task Force on Climate-Related Financial Disclosures (TCFD) reporting – where the UK is already a world-leader – and taxonomy disclosures.</p> <p>Ahead of COP26, the government is rallying the financial services sector to commit to net zero through membership of the Glasgow Financial Alliance for Net Zero and will work closely with the regulators to encourage and support firms to publish transition plans, providing further details before the end of 2021.</p>
	<p>In the green gilt framework, setting out the rules on what spending green sovereign bonds can be used for, ensure that revenue is used to fund expenditure that will genuinely contribute to net zero and improved climate resilience.</p>	<p>The <i>UK Green Financing Framework^{xxvi}</i>, published on 30 June 2021, sets out the types of expenditures that could be financed with proceeds from the government's green financing instruments. The headline categories align with the International Capital Market Association (ICMA) Green Bond Principles and will be reviewed as and when the principles are updated, and when the UK Taxonomy develops.</p> <p>The Carbon Trust published a pre-issuance impact report which reviewed the alignment of the</p>

Government’s intended allocation of proceeds with the Committee on Climate Change’s recommendations on climate targets for the whole of the UK. The Carbon Trust were “confident that the programme will contribute to achieving net zero by 2050”.

The government has committed to publishing an impact report on the environmental impacts (and social co-benefits) of the projects funded under these categories. These will be against a list of metrics related to achieving net zero, climate resilience, and biodiversity.

Table A4

Recommendations for the Department for Business, Energy and Industrial Strategy (BEIS)	Response
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<p>Crosscutting</p> <p>Publish the overall Net Zero Strategy. It should:</p> <ul style="list-style-type: none"> • Provide a comprehensive plan for achieving net zero, the 2030 NDC and the carbon budgets, setting out ambition for sectors and key technologies and behaviours that together will meet the challenge. • Set out the approach to the key cross-cutting challenges of fair funding, just transition, skills, public engagement, local delivery, governance. • Set timelines for how policies will start to deliver decarbonisation with the required urgency, 	<p>The <i>Net Zero Strategy</i> sets out how the UK will meet its ambitious climate targets. It includes bold policies and proposals to cut emissions and create new jobs and industries across the country. It sets out the action we will take to deliver on our carbon budgets and the UK’s 2030 Nationally Determined Contribution (NDC), and establishes our longer-term pathway to net zero by 2050.</p> <p>There is a clear opportunity to integrate our approach to climate mitigation, adaptation, and other environmental policies to maximise co-benefits and minimise trade-offs. This response should be read alongside the <i>Government Response to the CCC Progress Report on Adapting to Climate Change (2021)</i>. Several of the CCC’s recommendations are relevant to both documents, and departments have worked closely to develop shared responses to reflect this.</p>
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and ensure that wider policy development is consistent with the UK's climate goals.

- Ensure adaptation is properly integrated in the plan, maximising synergies and minimising trade-offs, while recognising the risks and impacts from climate change (see Adaptation Progress Report for more details).
- Introduce processes for monitoring progress and mechanisms to course-correct over time.

We will undertake the following to monitor progress and course-correct over time:

- A *Net Zero Strategy* refresh when we set a new carbon budget, with the next one planned in 2026 with Carbon Budget 7;
- A public update every year as part of our annual response to the Climate Change Committee on progress in the previous year against the delivery pathway to net zero.

Develop a **public engagement** strategy for net zero which builds on the findings of the UK Climate Assembly by involving people in decision-making, providing trusted information on decarbonisation choices and the need to reduce emissions. The strategy should link to engagement on adaptation and identify preferred policy options to empower people to contribute fully towards the path to Net Zero.

The *Net Zero Strategy* sets out our approach to public engagement and supporting green choices. Since 2019, we have run or are still running 13 deliberative dialogues on climate issues including net zero, homes, heating, decarbonising transport, green savings, hydrogen, food, carbon capture utilisation and storage (CCUS), Advanced Nuclear Technologies (ANT), energy, and the environment.

We have also launched the Together for our Planet Campaign to raise awareness of COP26 and UK's work to combat climate change. Several digital tools to engage people in reducing their carbon footprint have also been funded. The Simple Energy Advice Service on reducing energy use in homes has had 1.4 million users since launching in 2018.

We will continue to engage the public on the changes that are needed to develop our ambitions on net zero and listen very attentively to feedback.

	<p>Ensure all departmental policy decisions, and procurement decisions, are consistent with the Net Zero goal and reflect the latest understanding of climate risks.</p>	<p>Answered in A1</p>
International	<p>Update the UK's long-term low greenhouse gas emission development strategy with the UNFCCC to reflect a formulated economy-wide plan to achieve net zero by 2050 (expected to be the <i>Net Zero Strategy</i>).</p>	<p>The <i>Net Zero Strategy</i> sets out the action we will take to deliver on our carbon budgets and the UK's 2030 NDC and establishes our longer-term pathway to net zero by 2050. The <i>Net Zero Strategy</i> will be submitted to the United Nations Framework Convention on Climate Change (UNFCCC) as the UK's updated Long-Term Low Emission Development Strategy under the Paris Agreement ahead of COP26.</p>
	<p>Place aligning global COVID-19 recovery plans with the goals of the Paris Agreement as a core goal of the UK's G7 and COP26 presidencies.</p>	<p>Answered in A1</p>
	<p>Publish a new strategy for the UK's international climate policy for after COP26 - ensuring that the initiatives for the COP26 presidency have long-term benefits for global emissions over the coming decade and support the implementation of policies to deliver on strengthened national targets.</p>	<p>The government is preparing a strategic framework on how the UK's international climate and nature activity can continue to drive ambition globally in the decade after COP26. This framework will be published in 2022 and will include reference to further work on the COP26 initiatives. It will draw on the <i>Net Zero Strategy</i> and on decisions made at COP26.</p>
Supporting business action	<p>Support businesses to play their full role in the Net Zero transition and in adapting to climate risks and opportunities, for example by extending and</p>	<p>As the UK's Net Zero Business Champion, Andrew Griffith MP supports the government's efforts to mobilise the business and investment community and to showcase UK businesses as global leaders in tackling climate change ahead of</p>

expanding the role of the Net Zero Business Champion beyond COP26, building on the Race to Zero and Race to Resilience campaigns and providing sufficient resources to fully support businesses of all sizes to engage in the transition, to input to policy development and to set their own robust Net Zero and adaptation action plans.

COP26. His aim is for as many UK businesses to join the Race to Zero – a global effort to reduce greenhouse gas emissions we all generate to net zero by 2050. Over 1700 small businesses and just over half of the FTSE100 have already signed up.

Following COP26 and the *Net Zero Strategy*, government will continue to work closely with businesses to decarbonise their activities. With regulators we continue to drive progress on Task Force on Climate-related Financial Disclosures (TCFD) through our upcoming Presidency of COP26 and G7 Presidency. Over time, TCFD will support investment decisions aligned with our transition to a low carbon economy.

Develop further ways to embed Net Zero and climate risk in **financial decisions** by UK firms, building on the UK's Green Finance Strategy. This should include implementing mandatory climate disclosure, adoption of a robust green taxonomy with clear guidance on how it should be used. It should also consider the recommendations of the Committee's Finance Advisory Group, such as making Net Zero and adaptation plans mandatory for financial institutions and monitoring financial flows into climate action.

Answered in A3

Determine appropriate regulatory arrangements, rules and guidance for the use of **carbon offsetting by UK corporates** within their net zero strategies,

Demand for carbon offsets is growing and could provide finance to critical sectors. The government supports the Voluntary Carbon Markets Integrity Initiative to help ensure companies use the market in addition, and not as an alternative, to reducing emissions in

	<p>recognising the growing demand for offsetting markets, the interactions with the UK ETS and currently accredited schemes (i.e. the Woodland Carbon Code and the Peatland Code), and the need to avoid double-counting or negative outcomes for non-carbon objectives.</p>	<p>line with the science. We continue to monitor several international initiatives in this space. The UK Voluntary Carbon Markets Forum, announced in Spring Budget, will position the UK and City of London as the leading global market for high quality voluntary offsets, drawing on independent initiatives like the Taskforce on Scaling Voluntary Carbon Markets.</p> <p>The UK is a leader in developing voluntary standards like the UK <i>Woodland Carbon Code</i>^{xxvii} and <i>Peatland Code</i>.^{xxviii} These include independent verification and safeguards, underpinned by the UK Land Carbon Registry, to avoid double counting.</p> <p>Finally, government has issued guidance in the Environmental Reporting Guidelines to help companies to identify high quality credits and will keep this under review.</p>
<p>Research and data</p>	<p>Drawing on the Energy Innovation Needs Assessments ensure innovation funding (e.g. through UKRI, Catapults, the Industrial Strategy Challenge Funding, BEIS Innovation Programme and the Net Zero Innovation Portfolio) drives forward an extensive research and innovation package for delivering a Net Zero, climate-resilient future.</p>	<p>The Net Zero Innovation Board (NZIB), chaired by the UK Government’s Chief Scientific Advisor, support work to ensure innovation funding is strategically aligned to deliver our net zero targets. Our overarching approach to net zero research and innovation support will be set out in the <i>Net Zero Strategy</i>. This will be followed by the publication of the UK’s first Net Zero Research and Innovation Framework. This will set out key research and innovation challenges and needs across the UK over the next 5-10 years, and provide a framework for future Net Zero R&D investment decisions across government. Government is already supporting research and innovation across a wide range of areas through the cross government net zero innovation portfolio. Decisions on innovation programmes will be based on the evidence, including the Energy Innovation Needs Assessments.</p>

Review plan for improving **data collection** and statistical reporting for the purposes of monitoring and informing the low carbon transition, as part of the broader work the ONS are already undertaking to improve the collection of climate-related data.

We have started a project looking at improving the industrial energy data landscape, starting with mapping out policy priorities. We will ensure that any new data collection is as minimally burdensome as possible on industry. We are ready to work with Office for National Statistics (ONS) to ensure accessible high-quality data is collected.

The Government's overarching approach to net zero research and innovation support is set out in the Net Zero Strategy and Net Zero Research & Innovation Framework.

Work with ONS to put in place plans to **collect and report data** annually on low carbon heat networks, specifically the amount of heat delivered (split by DUKES consumption sector, i.e. Residential/Public/Commercial/Industry, and where possible, by source of heat supply). This should be part of a plan for improving data collection and statistical reporting for the purposes of monitoring and informing the low carbon transition.

We recognise the importance of this area in achieving net zero by 2050. We are working closely with ONS on energy statistics and for heat and low carbon heat networks. We will continue to work together to explore approaches to obtaining data on low carbon heat networks.

Improve the collection and reporting of **industrial decarbonisation data** to allow for progress to be monitored more effectively, particularly on energy and resource efficiency.

We have kicked off a project looking at improving the industrial energy data landscape, starting with mapping out policy priorities. We will ensure that any new data collection is as minimally burdensome as possible on industry.

In the *Industrial Decarbonisation Strategy*, we have committed to publishing a call for evidence on low carbon products by March 2022, covering data collection to support demand-side measures.

Energy /
carbon
pricing and
emissions
trading

Set out a clear plan (with HMT) for ensuring that carbon prices and taxes on manufacturers, energy producers and aviation encourage emissions reductions in line with the CCC Pathway, planning for revised (and likely higher) carbon prices from 2023. This should include setting out a **cap for the UK ETS** consistent with a credible path to the sixth carbon budget for consultation by Q3 2021.

Answered in A3

Consult (with HMT) on **reforms to electricity pricing** to remove disincentives to electrification, based on consideration of the strategic and fair allocation of legacy policy costs associated with the past deployment of less-mature low-carbon electricity generation. It should also consider the balance of existing taxes, such as the Climate Change Levy, on different energy sources. These reforms in combination with wider sectoral incentives, standards and carbon pricing should remove price barriers to electrification.

We recognise that the way some costs are apportioned can incentivise or disincentivise consumer behaviour. We remain committed to working across government to identify how costs can be allocated in a way that drives decarbonisation and is fair and affordable for all energy users.

Consult (with HMT) on the introduction of a **carbon tax** (either as part of the UK ETS or a separate instrument) aimed at curbing rising emissions from Energy from Waste.

Answered in A3.

Commit (with DfT) not to use credits from the **Carbon Offsetting and Reduction Scheme for International Aviation** (CORSIA) for flights covered by the UK ETS unless and until they can satisfy strict eligibility criteria (equivalence, additionality, permanence, sustainability).

The UK ETS does not currently accept offsets as means of compliance, including credits from CORSIA.

The UK recognises the importance of international action to tackle emissions from international aviation and has been instrumental in agreeing and developing the global offsetting scheme, CORSIA.

As such, we have begun a review on how the UK ETS could interact with CORSIA, examining how the UK can meet its national and international obligations, while considering the extent to which options could lead to operators having to both cancel CORSIA Emissions Units and surrender UK ETS allowances for the same tonne of CO2 emissions.

The Government consulted on CORSIA implementation in January 2021. The consultation proposed six high-level options for possible interaction between CORSIA and the UK ETS.

We plan to consult on detailed proposals for any interaction between the two schemes later this year. Any changes to the UK ETS that may be required to account for CORSIA will be implemented no later than the start of Phase I(b) in 2024.

Develop (with DIT) the option of applying either **border carbon tariffs** or **minimum standards to imports** of selected

We recognise the importance of addressing the risk of carbon leakage. The *Net Zero Review* sets out potential approaches, including, but not limited to, Carbon Border

	<p>embedded-emission-intense industrial and agricultural products and fuels. This should include initiating development of carbon intensity measurement standards and fostering international consensus around trade policies through the G7 and COP presidencies.</p>	<p>Adjustment Mechanisms and product standards. We will provide a further assessment on potential options in due course.</p> <p>In the <i>Industrial Decarbonisation Strategy</i>, we committed to develop proposals for voluntary industrial product standards and product labelling, and to explore public and private procurement initiatives, which could address carbon leakage. We are also committed to reviewing our approach to free allocation of UK ETS allowances.</p> <p>The G7 leaders recognised the value of policies to price carbon and will work collaboratively on carbon leakage. They also committed to launch the Industrial Decarbonisation Agenda to drive market growth for green industrial products, via measures like low carbon product standards and green public procurement. This is in line with the UK and India-led Industrial Deep Decarbonisation Initiative, to harmonise embodied emissions reporting, procurement rules and standard setting.</p>
<p>Jobs and skills</p>	<p>Working with DWP, DfE, the Home Office and DLUHC, develop a strategy for a Net Zero workforce that ensures a just transition for workers transitioning from high-carbon to low-carbon and climate-resilient jobs, integrates relevant skills into the UK's education framework and actively monitors the risks and opportunities arising from the transition. This strategy should include the development and roll-out of plans for training and skills, with buildings</p>	<p>The government is committed to investing in our workforce to ensure people have the right skills to deliver net zero and thrive in the high-value jobs this will create. We must not leave places and workers behind as we level up the country and meet net zero.</p> <p>Acting on this commitment, we launched the Green Jobs Taskforce (GJTF) in partnership with business, skills providers, and unions. The taskforce published its independent report on 13 July 2021, with recommendations to government, industry, and the skills sector. Alongside publication, the government provided more detail on immediate steps. These included a Green</p>

and manufacturing being priority areas.

Apprenticeship Advisory Panel to identify existing apprenticeships that support green career paths, and our Free Courses for Jobs offer already supporting adults to study fully funded qualifications in crucial areas such as construction, forestry, and engineering.

We have programmes in place – including apprenticeships, skills bootcamps, traineeships and T Levels - to help us grow future talent pipelines and deliver the skilled individuals we will need. The Lifetime Skills Guarantee will help people train and retrain at any stage of their lives and so develop the skills most valued by employers. And, starting this year, we are providing £2.5 billion for a new National Skills Fund (NSF). The NSF aims to fund the skills needed for the economy of the future and help people retrain and upskill into better more productive jobs, including those opportunities provided by the green recovery and our net zero ambition.

To maintain momentum across this agenda, we are establishing a cross-cutting delivery group to oversee the Green Jobs and Skills Action Plan and progress the implementation of the GJTF recommendations.

We are also establishing the Net Zero Building Council which will focus on helping achieve critical missions, including building a highly skilled UK market supporting green jobs, in the context of wider social/housing priorities and affordable energy bills; and providing strategic advice on the government's aim to decarbonise all buildings.

Design industrial decarbonisation policies to **support and create jobs**, especially in regions with reliance on industrial jobs.

Many existing skills will be transferable to clean growth industries like offshore wind, CCUS and hydrogen production. Modelling estimates that CCUS and hydrogen could enable 50,000 jobs by

		<p>2030 across industry, power, and the transport and storage network.</p> <p>To support green jobs and ensure significant social and economic benefits are delivered across industry, government will need to work with business and skills providers to support the current and future UK industrial workforce as it transitions to net zero.</p> <p>We are currently working to identify the specific skills requirements that will enable a smooth transition, building on the recommendations from the Green Jobs Taskforce. We plan to work with local supply chains to develop skills policies that support a transition in all parts of the UK, building on improvements in technical education, and ensuring local areas can develop an appropriate skills pipeline.</p>
Buildings	<p>Produce a robust, equitable and ambitious heat strategy to eliminate emissions from buildings through a clear direction for the next 30 years. This must include:</p> <ul style="list-style-type: none"> • Standards covering all segments of the building stock, with support for consumers through the transition. • Plans to rebalance policy costs - in consultation with the Committee on Fuel Poverty and wider stakeholders - while making low-carbon solutions more financially attractive. • Plans to introduce Green Building Passports. • Formalisation of a governance framework to drive 	<p>The <i>Heat and Buildings Strategy</i> sets out the required actions to decarbonise buildings over the next decade, helping meet near term carbon budgets and getting us on track for net zero by 2050.</p> <p>The strategy:</p> <ul style="list-style-type: none"> • commits to consulting on minimum energy performance standards across tenures, building on our existing regulations in the private rented sector; • commits to publishing a Call for Evidence and working with industry and consumers to identify how costs on bills can be allocated in a way that drives decarbonisation; • states the need for a process for decision-making on buildings decarbonisation at national, sub-national and local levels; • highlights the potential for local planning and the link to heat

decisions on heat infrastructure including a role for area-based energy plans and zoning of heat networks.

network zoning, plans for which we are consulting on; and

We are engaging with industry stakeholders to explore the potential to deliver building passports .

Provide a stable long-term policy framework to support sustained **energy efficiency and heat pump** growth at sufficient scale (i.e. 600,000 heat pumps per year in existing homes by 2028). This must include a replacement for the Green Homes Grant voucher scheme which works, backed by standards and support for non-residential heat pump installations. Create a level-playing field for hybrid heat pumps off the gas grid and ensure hybrid heat pumps are an integral part of PAS2035 retrofit coordinator advice.

We are bringing forward a comprehensive range of policies to support the sustained growth of energy efficiency and heat pump deployment.

This includes:

- financial support for heat pump installations in domestic and small non-domestic buildings through the £450 million Boiler Upgrade Scheme from April 2022 and consulting on regulations to phase out high-carbon heating off the gas grid and introducing a new market-based incentive for heat pump deployment;
- supporting energy efficiency measures and low-carbon heat through the Social Housing Decarbonisation Fund, Green Homes Grant Local Authority Delivery Scheme and the Home Upgrade Grant;
- phasing in higher minimum performance standards on energy efficiency across tenures and products to meet our commitments; and
- establishing market enablers, e.g. low-cost green finance to support action across all buildings.

Hybrid heating systems have been included in our large-scale Electrification of Heat Demonstration Project, to provide further evidence on their potential role in decarbonising heating.

Establish mechanisms to close the substantial funding gap for **heat networks**, with a multiyear funding programme of sufficient scale to deliver the growth in network deployment, and transition to low-carbon heat sources, needed. Finalise policy on the future market framework for heat networks, including requiring new district heat schemes to utilise low-carbon sources from 2025 at the latest and setting regulations for the conversion of legacy fossil fuel schemes to low-carbon sources.

The Heat Networks Investment Project (HNIP) is investing £320 million up to April 2022 to support the construction of heat networks and accelerate the growth of the market across England and Wales. We expect around £1 billion of private and other investment to be leveraged by HNIP.

The £270 million Green Heat Network Fund, planned to run from 2022 to 2025 as successor to HNIP, intends to provide targeted financial support to help both new and existing heat networks adopt low carbon sources of energy and related technologies by addressing barriers to progress, providing incentives for low carbon heat utilisation and stimulating market-readiness and preparation for future regulation.

In June 2021, BEIS launched a £10 million Green Heat Network Fund transition scheme, to support projects' readiness to apply for construction funding when the main scheme opens in April 2022.

We will shortly publish government's response to last year's *Heat Networks Market Framework* consultation and are currently consulting on our proposals for Heat Network Zoning in England.

Publish proposals for standards to phase out the installation of **new liquid and solid fossil fuel heating** by 2028 at the latest. Send clear signals on the phase-out of gas heating, including the roles for area-based planning and standards in phasing out gas installations (as in Scotland).

We are consulting on phasing out new oil, coal and liquefied petroleum gas heating, and replace with low carbon alternatives in non-domestic buildings from 2024 and homes from 2026.

Move to **multi-year programmatic funding** to deliver the stated ambition of halving emissions from public buildings by 2032. This must be supported with cross-government strategy (either independent or integrated with the Net Zero or Buildings Strategies) and funding levels in the order of £1 billion/year. Support mechanisms must be designed so that smaller public bodies can access them.

We will provide a further £1.42 billion of funding for the Public Sector Decarbonisation Scheme (PSDS) over 2022/23 to 2024/25 to reduce emissions from public sector buildings. We also continue to provide support so that organisations that lack the expertise and skills that are required to identify, develop and deliver decarbonisation projects can access those skills, having launched on the 28 July 2021 a second phase of the Low Carbon Skill Fund, which makes £15 million available in this financial year for this purpose, building on the success of the first phase.

Public sector decarbonisation remains an important part of our strategic approach to delivering net zero, and the public sector must make an important contribution both by reducing its own emissions and showing leadership, as set out in the *Net Zero Strategy* and *Heat and Buildings Strategy*.

Set requirements for all **new gas boilers to be hydrogen-ready** by 2025 at the latest, while ensuring that all new boilers outperform current and expected future air quality standards.

As set out in the *Hydrogen Strategy*, we aim to consult later this year on the case for enabling, or requiring, new natural gas boilers to be easily convertible to use hydrogen ('hydrogen-ready') by 2026. We will also use this consultation to test proposals on the future of broader boiler and heating system efficiency and explore the best ways to reduce carbon emissions from our gas heating systems over the next decade.

Implement improvements to the **Energy Performance Certificate (EPC)** and **Standard Assessment Procedure (SAP)** framework, including:

- Ensuring EPCs drive deployment of the necessary energy efficiency measures

We will deliver commitments within our Action Plan to improve Energy Performance Certificates (EPCs) and will continue to review the metrics and methodology used to enable our policy objectives.

Government has started work on the future version of the Standard Assessment Procedure (SAP) methodology (SAP 11). We

and do so on a holistic basis to address overheating, ventilation, and moisture-risk.

- Supporting delivery objectives across both energy efficiency and low-carbon heat, and valuing properly the benefits of low-carbon and flexible technologies.
- Formally integrating a forward trajectory for declining grid carbon-intensity, in line with Government projections.
- Addressing wider issues of quality/robustness, with a commitment to integrate in-use performance metrics from 2023.
- Plans for the future role of Green Building Passports.

commissioned a project to ensure SAP is best able to meet our policy objectives, the final report for this has been published, and government is considering its recommendations. This will include investigating the use smart meter data and Smart Meter Enabled Thermal Efficiency Ratings to better reflect in-use performance.

We are engaging with industry stakeholders to explore the delivery of building passports and are aware of projects delivering a passport or logbook. We are supporting TrustMark in developing their 'PropertyHub' allowing homeowners to view past retrofit carried out through the government-endorsed TrustMark scheme.

This is in conjunction with the response provided by DLUHC to the same questions in section A7.

Bring forward the date to reach EPC C in **social homes** to 2028, in line with the Private Rented Sector (PRS) proposals and finalise the delivery mechanism. Implement ambitious **PRS standards** for homes which drive fabric efficiency, while valuing deployment of cost-effective low-carbon heat alongside this. Implement the EPC B target for **PRS non-domestic buildings** in line with new proposals. Consult on options to cover the regulatory policy gap for **owner occupied homes**.

Through the *Clean Growth Strategy*, we have already set the aspiration for as many homes as possible to reach Energy Performance Certificate Band C (EPC C) by 2035 where practical, cost-effective, and affordable.

We will also consider setting a long-term regulatory standard to improve social housing to EPC Band C and consider levers required to decarbonise the stock in line with net zero. We will consult the sector before setting any regulatory standard. To implement standards in the private rented sector (PRS), our priority is to support landlords in demonstrating compliance, and we are suggesting a number of proposals to make compliance with the PRS Regulations

		<p>more straightforward, thus reducing the need for enforcement.</p> <p>For PRS non-domestic buildings, we aim to bring forward the necessary legislation to improve compliance and enforcement to achieve our target of EPC B by 2030 as soon as possible.</p> <p>We plan to consult on options to upgrade homes in the owner occupier sector.</p>
<p>Power</p>	<p>Publish a plan for reaching an emissions intensity of 50 gCO₂/kWh by 2030, with a total of around 350 TWh of low-carbon generation. Set out a schedule for regular auctions to procure low-carbon generation, with a clear pathway of volumes to be procured and robust contingency for uncertainties in demand and delivery. Address potential barriers to deploying and using low-carbon generation at scale (e.g. the planning and consenting regime for renewables and networks, exposure to climate risks) and, with Ofgem, develop a framework under which sufficient supply resilience can be ensured.</p>	<p>The next statutory review of the Capacity Market is due by summer 2024, and work is ongoing to ensure it continues to be an effective security of supply mechanism as the power sector is decarbonised. This includes the recent publication of a call for evidence exploring early actions to align the Capacity Market with net zero, with a focus on bringing forward more low carbon capacity (e.g. by introducing a separate low carbon auction) and improving assurance that capacity will deliver when required (e.g. by strengthening the penalty regime).</p> <p>Renewable power will form the backbone of our decarbonised energy system. We will need to continue the growth of offshore wind beyond our 2030 target, combined with similarly ambitious deployment of locally supported onshore wind and solar. The Contracts for Difference (CfD) scheme continues to be hugely successful in supporting this deployment. The CfD will be key to delivering the levels of generation required by 2030 and ensuring there is an effective way to provide long-term stability will remain important throughout the 2030s to achieve affordable, scalable deployment.</p> <p>To ensure a healthy pipeline of future projects is available we have also set up a Ministerial Delivery Group for</p>

renewables that allows all relevant departments to come together to address the barriers to deployment, including planning and consenting, whilst ensuring growth in capacity is sustainable by mitigating impacts on the environment and other users of the land, air and sea.

We are also consulting on the National Policy Statements for energy infrastructure which set out the policy for consenting renewable generation.

Finally, we are committed to implementing the Dispatchable Power Agreement for power CCUS, and we will aim to deploy at least one plant in the mid-2020s through the CCUS Cluster Sequencing process, subject to the outcome of that process, including value for money and affordability considerations.

Commit to phasing out **unabated gas generation** by 2035, subject to ensuring security of supply.

A clean, reliable power system is the foundation of a productive net zero economy as we electrify other sectors - so we will fully decarbonise our power system by 2035, subject to security of supply.

While gas generation currently plays a critical role in keeping the UK electricity system secure and, the development of clean energy technologies means it will be used less in the future.

The government is taking steps to bring forward low carbon technologies capable of replicating the role of unabated gas generation in the electricity system, including carbon capture, utilisation and storage (CCUS) enabled generation, hydrogen-fired generation, bioenergy with carbon capture and storage (BECCS,) and flexible storage. We also recently published a call for evidence, in partnership with the Welsh Government, on expanding existing decarbonisation readiness

requirements for new combustion power plants and a call for evidence on changes to support the Capacity Market to bring forward more low carbon capacity.

We are committed to developing the clean alternatives that can reduce and replicate the role of gas generation in the power system as the CCC acknowledges - that unabated gas generation may be required in limited circumstances to provide security of supply.

Publish a comprehensive long-term strategy for **unabated gas phase-out**, including ensuring new gas plant are properly CCS- and/or hydrogen-ready as soon as possible and by 2025 at the latest.

Unabated gas generation is currently critical to ensuring electricity security by providing flexible and dispatchable capacity in addition to the full range of system services required by the Electricity System Operator to keep the electricity system secure and stable.

Government will continue to develop current and proposed policies to bring forward low carbon alternatives to unabated gas generation and will consider the policy levers that could be used in future to manage carbon emissions from unabated gas generation without impacting security of supply.

In July 2021, government (in partnership with the Welsh Government) published a *Call for Evidence*^{xxix} on requirements to ensure all new build combustion power plants, including unabated gas plants, are “decarbonisation ready” such that they have a viable decarbonisation plan through retrofitting either carbon capture or low carbon hydrogen generation technology. Subject to feedback on the proposals and parliamentary time, we aim to implement the decarbonisation readiness requirements by 2023.

Develop a strategy as soon as possible on

We are considering how our policies should evolve and will continue to be

market design for the medium to long term for a fully decarbonised, resilient electricity system in the 2030s and onwards.

guided by our commitment to meeting carbon budgets, maintaining energy security, and ensuring cost effectiveness. We will also continue to adopt a system-wide approach in assessing the case for any changes. Any future changes would need to be carefully planned and introduced gradually over time and will be subject to consultation

Develop mechanisms for strategic investment in coordination with Ofgem to ensure that **electricity networks** can accommodate increased future demand levels, including large localised demand increases associated with electrification in manufacturing, transport and buildings, and that lack of network capacity does not cause delays in emissions reduction.

Government recognises the significant importance of enabling networks to invest strategically so that we can meet net zero. We are working closely with Ofgem as the regulator develops the regulatory framework to allow for such investments in RIIO-2. In addition, government is working to enable competition in onshore electricity networks, which will open networks up to new sources of investment and open-up opportunities throughout the supply chain. The upcoming Network Strategy will also lay out further policy priorities and measures to enable required timely investment into the network.

Develop a strategy to coordinate the development of **interconnectors**, connections for offshore wind farms and the enhancement of inter-area transfer capacity for the onshore network, ensuring cost-effective, timely delivery, bringing forward any legislation necessary to enable it.

In July 2020, government launched the Offshore Transmission Network Review (OTNR) to bring together the key stakeholders involved in the timing, siting, design and delivery of offshore wind to consider all aspects of the existing regime and how this influences the design and delivery of transmission infrastructure for interconnectors and offshore wind. The review has brought together key government departments, devolved administrations, and organisations to realise the benefits of coordination, whilst maintaining the pace of offshore wind delivery. In July 2021 the review issued its first formal policy consultation covering key workstreams in the near and medium-term timeframes as well on multi-purpose interconnectors, which combine the connection of offshore wind with links to other markets. BEIS has also

published a further policy consultation on the future enduring regime for offshore wind, and consideration will be given to a range of implementing measures.

Work in partnership with Ofgem to publish and implement a new **Smart System Plan** and **Energy Data and Digitalisation Strategy**, including working with DCMS on cyber-security, in order to continue to unlock the full benefits of electricity system flexibility. Ensure that, alongside smart standards for heating, all electricity users have access to half-hourly metering and the option of tariffs that encourage flexibility in use of electric heat and electric vehicle charging.

In July 2021 we published, with Ofgem, a new *Smart Systems and Flexibility Plan*^{xxx} and the UK's first Energy Digitalisation Strategy, the latter which was also jointly developed with InnovateUK. It includes measures to facilitate flexibility from, and protect, consumers, removing barriers to flexibility on the grid including long duration storage, reforming markets to reward flexibility, and digitalising our energy system. We commissioned the British Standards Institution to develop technical standards for demand side response in domestic and small business settings, including via smart heating appliances. These standards were published in May 2021 and we will work with industry to support their uptake in relevant contexts. Ofgem has confirmed that the retail energy market will move to market-wide half-hourly settlement by October 2025. Market-wide half-hourly settlement means that energy suppliers will use data about when energy is being used and how much it costs, reducing the need to rely on estimates based on a profile of the average consumer. Building on smart meter functionality, half-hourly settlement should unlock smart tariffs and other services which will help incentivise consumers to participate in the emerging smart energy system.

Improve information sharing on climate risks to infrastructure interdependencies at a local level, especially for **electricity, digital and ICT networks**. As reported in our previous assessment in 2019, NAP actions

Answered in A8

to enhance arrangements for information sharing between local infrastructure operators and improve understanding of critical risks arising from interdependencies have not been completed. Defra’s link with Local Resilience Forums is key, and BEIS and DCMS should engage with utility companies to encourage standardised benchmarking and data sharing on climate risks to electricity networks, digital & ICT.

Waste

Set out capacity and usage requirements for **Energy from Waste** consistent with plans to improve recycling and waste prevention. Issue guidance to align local authority waste contracts and planning policy to these targets.

Answered in A5

Introduce the necessary planning guidance and policy to ensure any **new Energy from Waste** plants (including incineration, gasification & pyrolysis facilities) are built with carbon capture usage and storage (CCUS) or are ‘CCUS-ready’.

The government announced a review of the energy National Policy Statements (NPS) in the *Energy White Paper* published in December 2020. We published the consultation on the draft NPS on 6 September 2021. The consultation refers to the *Decarbonisation Readiness Call for Evidence* which closed on 22 September.^{xxxii} This sought views on the expansion of the Carbon Capture Readiness requirements which apply in England and Wales including whether these should apply to all new

		<p>build combustion power plants, including energy from waste plants.</p>
	<p>Set out how existing Energy from Waste plants will be supported to be retrofitted with CCUS from late 2020s onwards, with 2050 a backstop date for full CCUS coverage.</p>	<p>We are exploring options to reduce emissions from these plants within the power sector, including whether support for CCUS at Energy from Waste plants could be provided by the Industrial Carbon Capture Business Model. The Government’s approach in respect of this is still under consideration and we intend to provide further details later this year.</p>
<p>Manufacturing and construction</p>	<p>Establish funding mechanism(s) to support operational and capital costs of both electrification and hydrogen-use in manufacturing, as soon as possible, with the aim of awarding funding in 2022. There must be mechanisms for both options, not only hydrogen, and the mechanism(s) should be designed to ensure that, in the medium term, hydrogen-use and electrification compete on a level playing field, to ensure the best value for consumers and taxpayers. Support for electrification may be combined with reforms to electricity pricing.</p>	<p>Funding mechanisms to support the uptake of electrification and hydrogen-use in industry include:</p> <p>Industrial Energy Transformation Fund – Phase 2: will provide additional support for businesses to fuel switch to hydrogen or electrify their industrial processes through grants that support the upfront costs of installing or retrofitting onsite industrial equipment.</p> <p>The Fuel Switching innovation competition and Hydrogen Supply competition will help to proactively accelerate the development of potential electrification or hydrogen technologies.</p> <p>As set out in the <i>Industrial Decarbonisation Strategy</i>, by the end of 2021, we will set out any initial next steps that government will take to support uptake of electrification and biomass (primarily with CCUS) for industry.</p> <p>In addition to the above, we will launch a Fairness and Affordability Call for Evidence on these options for energy levies and obligations to help rebalance electricity and gas prices and to support green choices, with a view to taking decisions in 2022. This is discussed further in the Net Zero</p>

Strategy and Heat and Building Strategy.

Continue to support **innovation** and demonstration of fuel switching and CCS technologies for decarbonising manufacturing and construction. Ensure that a full range of options is developed, filling previous gaps in support, such as encouraging electrification projects to come forward.

Government will deliver the following:

- The £55 million Industrial Fuel Switching innovation competition, which will include a Lot focused specifically on electrification to encourage industrial fuel switches to electricity;
- The £40 million Red Diesel Replacement competition, which aims to develop and demonstrate low carbon alternatives to red diesel, such as hydrogen and electrification, to decarbonise the construction and mining & quarrying sectors; and
- The Carbon Capture, Usage and Storage (CCUS) 2.0 Innovation competition, to advance CCUS technology.

Set out which policies will deliver the pathway to 4 MtCO_{2e} of **industrial energy efficiency** abatement set out in the Industrial Decarbonisation Strategy and quantify how much abatement will come from each policy:

- Set out the future role of Climate Change Agreements (CCAs) and any required CCA reforms.
- Consult on mandating the use of Energy Management Systems and on Government support and incentives for implementing energy management standards.
- Set out the role of energy efficiency

Government intends to explore regulatory measures to drive greater, earlier uptake of energy efficiency measures in line with carbon budget targets, supported by a wider package of policies to enable a smooth industry transition. We intend to consult on the development of this package of measures.

Climate Change Agreements (CCA): the CCA scheme was extended in 2021 by two years through the addition of a new target period (1 January 2021 to 31 December 2022) and reduced rates of Climate Change Levy in place until March 2025. The consultation on the extension last year sought initial views on potential reforms were there to be a future CCA scheme beyond the extension. We are currently considering the role for the CCA scheme beyond this extension.

Audit programmes: we published a consultation on 6 July 2021 on

- standards and audit programmes.
- Develop resources such as direct advice and training to address capacity and expertise gaps, and highlight available energy efficiency solutions, particularly for SMEs.

strengthening the Energy Savings Opportunity Scheme, which runs to 28 September. The consultation sought views on improving audit standards, introducing a net zero element to existing energy efficiency audits, improved disclosures in the next phase. In addition, views were sought on potential longer-term options of extending to medium sized organisations and requiring implementation of audit recommendations.

Direct advice and training: we are exploring the role of technical advice services in addressing knowledge and capacity barriers in industry. Case studies from the Industrial Energy Transformation Fund (IETF) will be published on gov.uk. The Business Climate Hub, the primary digital platform for the Together for Our Planet Business Climate Leaders Campaign, will be a “one stop shop” advice service for small and micro businesses. We plan to retain and expand this platform post-COP26, with a view to creating a longer term, government-led portal for domestic business.

Ensure the policy package for decarbonising manufacturing addresses manufacturers’ low appetite for investments with long **payback times**, either using grants or favourable loans, particularly for energy efficiency.

The Industrial Energy Transformation Fund (IETF) has provided capital grant funding for energy efficiency measures since the launch of Phase 1 in July 2020. Grant funding for energy efficiency measures will continue to be offered throughout Phase 2, which launched in September 2021, alongside new capital support for on-site decarbonisation proposals.

Government intends to explore regulatory measures to drive greater, earlier uptake of energy efficiency measures in line with carbon budget targets, supported by a wider package of policies to enable a smooth industry transition. We intend to consult on the development of this package of measures. Work will be undertaken to

ensure sustainable financing measures are available long-term.

Work with the minerals industries to develop a detailed joint plan for **CO₂ transport from dispersed sites**.

We will start engaging with the minerals industry in Q4 2021 to explore decarbonisation options for dispersed sites, building on the report published in August 2020 (*CCS deployment at dispersed industrial sites*^{xxxii}).

Carbon capture, utilisation and storage (CCUS) projects at dispersed industrial sites may apply for business model support as part of phase-2 of the cluster sequencing process if they meet eligibility requirements. In the Transport and Storage Business Model update published in May 2021, we set our intent to develop the licence conditions and business model arrangements so that non-piped sources of CO₂ can be accommodated by the Transport and Storage Regulatory Investment (TRI) model (i.e. accommodating CO₂ from dispersed sites). We are currently engaging with industry and the devolved administrations to understand how best to incorporate non-pipeline transportation within a UK carbon dioxide network.

Commit to **targets** for ore-based steelmaking and cement production in the UK to reach near zero emissions by 2035 and 2040.

Steel: the government remains committed to the UK steel industry as part of a decarbonised future. As committed to in the *Industrial Decarbonisation Strategy*, government will work in partnership with industry and trade unions via the Steel Council on the shared objective of creating an achievable, long-term plan to support the sector's transition to a competitive, sustainable, and low carbon future. Hydrogen-based steelmaking, CCUS and electrification are some of the technological approaches being considered as part of this process.

Cement: the government will continue to support the decarbonisation of the

cement sector through programmes such as: Industrial Energy Transformation Fund, net zero innovation portfolio, UK Research and Innovation's Innovate Transforming Foundation Industry Challenge, and the industrial carbon capture business model (subject to the outcome of the cluster sequencing process). As committed to in the *Industrial Decarbonisation Strategy*, we have started a process of ongoing engagement with the cement sector to explore further decarbonisation options and will consider the implications of setting a target date for near zero emissions cement production.

Deliver industrial **carbon capture contracts (ICC)** to enable final investment decisions on the first ICC projects by mid-2022.

We are continuing to develop the industrial carbon capture business model for initial industrial carbon capture (ICC) projects and are aiming to finalise the ICC contract in 2022. Through the new Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme, we will be announcing a funding envelope in 2022 that will enable us to award the first contracts to industrial carbon capture facilities from 2023 through the Cluster Sequencing process, to deliver up to 3 MtCO₂/yr of industrial carbon capture by the mid-2020s.

Deliver the proposed **CCS transport and storage** regulatory investment model to enable final investment decisions by mid-2022 that are consistent with establishing at least two CCS transport and storage clusters in the mid-2020s.

The business model for CCS transport and storage is under development, with further updates to be published in 2021. The objective is to finalise the model in 2022. This will be aligned with completing negotiations with transport and storage network developers to deliver the government's commitment of at least two clusters in the mid-2020s.

Create a clear incentive for **manufacturing facilities not currently covered by the UK ETS** to switch to low-carbon

Answered in A3

	<p>energy sources by reforming the suite of energy and carbon policies, which could include rebalancing the Climate Change Levy rates for electricity and gas.</p>	
<p>Resource efficiency in manufacturing and construction</p>	<p>Set out a strategy for decarbonisation of off-road mobile machinery and work with industry to identify potential policies to increase uptake of low-carbon off-road mobile machinery. This will require work across BEIS, DLUHC, DfT and Defra.</p> <p>Step up efforts (with Defra) to deliver the waste prevention and resource efficiency improvements required as part of the pathway to Net Zero, including by:</p> <ul style="list-style-type: none"> • Accelerating delivery of the Waste Prevention Programme so that key policies, such as Extended Producer Responsibility and new product standards, are on track to be in place well before 2025. • Setting out how levels of resource efficiency improvements identified within the Industrial Decarbonisation Strategy will be delivered. 	<p>New technologies, particularly for small, light duty electrification equipment, have begun to penetrate the market, however, government intervention is likely to be necessary to ensure innovation continues and uptake is consistent with net zero.</p> <p>Existing support includes the £40 million Red Diesel Replacement competition.</p> <p>In addition, government will develop policies to support the deployment of technology solutions and the required infrastructure.</p> <p>Answered in A5</p>

- Beginning to develop and implement any additional policies needed to deliver these resource efficiency improvements, by the end of 2022.
- Ensure cross-departmental working, potentially through new cross-Whitehall governance focused on resource efficiency.

Develop policies (with DLUHC, Defra and DfT) to drive more **resource-efficient construction** and use of existing low-carbon materials, including a substantial increase in the use of **wood in construction**. Policies should include:

Answered in A5

- Reviewing and clarifying the position of structural timber in the ban on combustible materials, underpinned by further research and testing where necessary, and ensuring there are no barriers to the safe use of timber in buildings. The buildings safety regulator to play a role in overseeing this on an ongoing basis.
- The development of a fully-funded policy roadmap on the use of timber, including policies to support the development of UK wood supply chains.

- Finalising the reporting methodology for whole-life carbon standards.
- Setting out a plan for phasing in mandatory whole-life reporting followed by minimum whole-life standards for all buildings, roads and infrastructure by 2025, with differentiated targets by function, scale, and public/private construction.

Consult on detailed proposals (with Defra) for **product standards and extended producer responsibility** to improve the resource efficiency of consumer goods' lifecycles. The proposals should include all consumer goods with high environmental impact and cover how products are made, through indicators such as the level of recycled content and critical material content, and the reparability, durability and upgradability of a product.

In addition to packaging, we will consult on potential reforms of all our existing producer responsibility schemes. These include schemes for batteries and end of life vehicles, and waste electronic and electrical equipment. We have recently consulted on our detailed proposals for packaging extended producer responsibility and consultations on waste electricals and batteries are due to be issued later in 2022. End-of-life vehicles will follow.

Additionally, we have committed to review and consult on measures such as extended producer responsibility and product standards for five new waste streams, by the end of 2025. We are conducting research on textiles and end-of-life fishing gear to inform the development of policy proposals and will consult stakeholders on options for these by the end of 2022.

Work with business to encourage and **enable consumers to share**, lease and use products for longer while discouraging 'disposable' business models.

Driving more sustainable product design so that products last longer through multiple use phases is one of the ambitions detailed in our draft 2021 Waste Prevention Programme. To achieve this, we will develop proposals focussed on the highest impact product groups that combine

		<p>producer responsibility, product standards, and information or labelling. Used together, these measures can support a shift to more circular business models both by enabling consumers to make more sustainable decisions and by incentivising design for multiple uses and longer lifetimes.</p> <p>In the forthcoming consultation on our review of the waste electronic and electrical equipment regulations, we will test the possibility of using circular business models as a basis for modulation of the producer obligation.</p>
<p>Transport</p>	<p>Continue to support (with DfT and Ofgem) widespread deployment of EV charging infrastructure:</p> <ul style="list-style-type: none"> • This should ensure it can support high EV uptake levels. Project Rapid has the right ambition for the strategic road network and should be developed into a full strategy for the 2020s and beyond. • Further investment is needed to support on-street and other urban charging solutions for those without off-street parking and destination charging. • Government should aim for there to be around 150,000 public charge points operating by 2025. These should be widely available across all regions of the UK. • Implement the recommendations of the EV Energy Taskforce, in 	<p>Answered in A6</p>

	<p>particular improving the consumer charging experience and making smart-charging accessible, appealing and cost-effective for as many EV users as possible.</p>	
	<p>Produce a clear assessment (with DfT) of how best to re-use and recycle EV batteries and fund development of competitive, large-scale battery recycling facilities in the UK.</p>	<p>Answered in A6</p>
	<p>Continue innovation and demonstration support (with DfT) for zero-carbon fuel technologies and their use in shipping, and ship efficiency measures. Develop incentives for zero-carbon ammonia and hydrogen supply chains.</p>	<p>Up to £20 million will be available this year for the Clean Maritime Demonstration Competition, to accelerate the design and development of zero emission marine vessels in the UK.</p> <p>A comprehensive approach to incentivise hydrogen production and development of supply chains is also set out in the UK <i>Hydrogen Strategy</i>.</p>
<p>Greenhouse gas removals (GGRs)</p>	<p>The overall Net Zero Strategy should place GGRs in context of a wider strategic approach to reaching Net Zero, setting out a plan for development and deployment of removals, but also for actions elsewhere to limit the need for them.</p>	<p>The <i>Net Zero Strategy</i> clearly sets out the role of GGRs as a complement to, rather than substitute for, ambitious action to decarbonise the UK economy.</p> <p>The strategy sets out proposals to enable the commercial demonstration of ‘at scale’ GGRs from the late 2020s. It sets out our approach to addressing financial barriers of the technologies, potentially including bespoke support for first of a kind (FOAK) technologies.</p> <p>It also sets out how we continue to build the evidence base on GGRs, aiming to reduce the uncertainty around how they can be most effectively and sustainably deployed.</p>

The wider strategy lays out possible pathways to net zero, the overall shape of transition to 2050 and a systems approach to policymaking for net zero.

Building on the Greenhouse Gas Removals (GGR) call for evidence, launch consultation on Government's preferred **GGR strategy** and long-term expected requirement for GHG removals, including a proposed market design, a set of governance principles and proposals that recognise the need for a long-term price signal.

In the *Net Zero Strategy*, BEIS has committed to consulting on our preferred business models for engineered GGRs in Spring 2022.

This will include consideration of bespoke contract-style mechanisms for FOAK plants as part of a range of methods for stimulating near-term deployment of these technologies at scale.

We have committed to establishing an independent audit function to provide robust monitoring, reporting and verification (MRV) of GGRs as proposed in our MRV Task and Finish Group report, published alongside the *Net Zero Strategy*.

As set out in the *Energy White Paper* (December 2020) we are also committed to exploring how the UK Emissions Trading Scheme could incentivise the long-term deployment of GGRs.

Support the **demonstration of engineered GGR** at scale in the 2020s, either through amending existing policies or introducing new support mechanisms.

In the Net Zero Strategy, BEIS has committed to consulting on our preferred business models for engineered GGRs in Spring 2022.

This will set out our preferred support mechanisms to enable the deployment of a range of 'at scale' FOAK GGR technologies from the mid-to-late 2020s.

Build on the recently commenced **innovation programmes**, the Direct Air Capture and other Greenhouse Gas Removals Competition and UK Greenhouse Gas

The Direct Air Capture (DAC) and other Greenhouse Gas Removals Competition has taken a portfolio approach to support a range of different technologies. The competition looks to have invested £70 million by March 2025.

Removal Demonstration Programme, to support both the demonstration and commercialisation of more advanced greenhouse gas removal technologies (taking these from technology readiness level 5 to 8), and alongside undertake research and development into less advanced removal approaches including through pilots and field experiments.

The programme's pilot projects should be able to remove between 100 and 1,000 tonnes of CO₂e per year in 2025 and have the potential to scale up to the kilotonne and megatonne scale by 2030.

Post-2025 we expect to continue to support and invest in viable GGR technologies and ensure that Carbon Capture, Utilisation and Storage (CCUS) infrastructure is in place to support them.

Further innovation support will be developed based on the consultation on business models in 2022 and on what lessons we learn from Phase 2 of the DAC and other GGR Innovation Competition.

Ultimately, the scale at which greenhouse gas removals technologies can be delivered depends on the scale of the carbon capture, transport, and storage infrastructure in place.

Ensure that a **public engagement strategy** for Net Zero includes national, regional, and local communities to improve the public's understanding of GGR approaches and both the local and system-wide implications of different options - awareness is currently very low, and support is mixed or uncertain.

We have published our public dialogue report exploring citizens' attitudes towards CCUS. This report is an invaluable resource for those producing and delivering policy and BEIS will consider how best to take account of the findings.

The *Net Zero Strategy* sets out our approach to public engagement and supporting the general public to make green choices, to generate widespread awareness across the UK.

Additionally, the UK Research and Innovation GGR demonstrators and coordinating hub will work to fill research gaps and broaden existing activities addressing public engagement and participation in decision making about GGRs.

	<p>Align with adaptation policies to ensure long-term resilience and effectiveness of GGRs in the face of climate impacts and exploit potential for co-benefits (e.g. choice of tree species, protecting new infrastructure from flood risks).</p>	<p>GGR deployment will require integration with Defra’s schemes (amongst others) to reward environmental land management: Sustainable Farming Incentive (SFI), Local Nature Recovery (LNR) and Landscape Recovery Schemes.</p> <p>Uncertain impacts from climate change (e.g., impacts to national stocks of high-grade farmland) also demands consideration of what is both feasible now and ahead to 2050.</p> <p>Further research is required to better understand best practice for establishing GGRs and the permanence of removals achieved in a productive and biodiverse landscape, and what levers may be required to establish such measures on land that is largely privately owned. Research projects on GGRs through UK Research and Innovation’s Strategic Priorities Fund (SPF) and Natural Environment Research Council and the HM Treasury Shared Outcomes Fund Nature Based Solutions programme will start to address these evidence gaps.</p>
<p>Fuel supply</p>	<p>Develop a Hydrogen Strategy out to 2035 that determines plans and sets out pathways to appropriate hydrogen use across power, industry, transport, and buildings; low-carbon hydrogen production options; and the associated infrastructure. Ensure that large-scale hydrogen trials begin in the early 2020s.</p>	<p>Government has set out a comprehensive <i>Hydrogen Strategy</i> detailing the key steps needed in the 2020s to deliver government’s 5GW production ambition by 2030 and ensure the UK hydrogen economy is suitably developed to help meet Carbon Budget Six and net zero commitments. This includes a roadmap to 2035, with commitments related to the whole hydrogen value chain including production, end use sectors, supply chains and networks and infrastructure.</p>
	<p>Deliver a Biomass Strategy that is aligned to the UK’s path to Net Zero, and</p>	<p>In the government’s response to Climate Change Committee’s (CCC) annual progress report to Parliament in 2020, we announced that we will</p>

which reflects recommendations on governance, monitoring and best-use from the Committee's 2018 Biomass report and 2020 Land Use report. The UK should also continue to take a global lead on further developing and improving UK and international biomass governance and sustainability criteria.

publish a new biomass strategy in 2022. This will review what amount of sustainable biomass could be available to the UK, how the sustainability criteria could be strengthened, and how this resource could be best utilised across the economy to help achieve net zero by 2050.

On 20 April 2021, we launched a call for evidence to seek input from a wide range of stakeholders and strengthen the government's evidence base around biomass. This closed on 15 June 2021, and we are now reviewing the responses received, which will feed into the biomass strategy.

In addition, we are aiming to publish a position paper this autumn, which will provide an update on the development of the strategy and provide an early signal to industry on the government's position on how biomass should and should not be used.

Set new requirements for CCS-readiness at **biofuel conversion facilities** of all scales. This should include dates beyond which new facilities should be built with CCS, and dates for when CCS will need to be retrofitted to biofuel facilities already in operation.

The government is already seeking to promote the use of CCS to further reduce carbon emissions from biofuels and other low carbon fuels through policy proposals and criteria for awarding funding to projects.

Specific CCS readiness requirements for installations processing biomass will need to be looked at as our CCS policy develops

Set out policies to reduce **upstream emissions from oil and gas** production by 68% by 2030, relative to 2018 levels:

- Develop policies to reduce emissions from existing oil and gas platforms, including developing carbon-intensity

HM Government (HMG) is working actively with industry, regulators and other stakeholders to address barriers to the electrification of oil and gas production and reduce flaring and venting.

The Oil and Gas Authority (OGA) already benchmarks the carbon emissions intensity of operators and fields and will publish these measures in its annual emissions report. The

<p>measurement standards for gas and oil.</p> <ul style="list-style-type: none">• Set a requirement for new plans for offshore oil and gas platforms and associated installations to use low-carbon energy for their operations, aligning to zero direct emissions from operational energy use by 2027.• Make plans to ensure flaring and venting is only permitted for safety reasons from 2025.	<p>OGA is also working with industry to agree a common approach to calculating emissions intensity and disclosing environmental data.</p> <p>The OGA's revised strategy and guidance ensure the sector incorporates low-carbon power into planning. Updated guidance on Field Development Plans later this year will ensure either that concepts are based on low carbon power or pre-investment for low carbon power retrofiting is included.</p> <p>The OGA 2021 guidance on flaring and venting sets out a tougher approach to driving reductions. HMG, including the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED), is working with the OGA to understand the impact on emissions and supply from mandating zero routine flaring and venting by a range of dates.</p>
<p>Work with Ofgem to make explicit how current and future policies will reduce emissions associated with methane leakage from the gas networks in a way that is consistent with the Sixth Carbon Budget.</p>	<p>There are decarbonisation strategies underway which should reduce the overall demand for natural gas and any methane leakage in alignment with the Sixth Carbon Budget. These include the production of hydrogen and increasing the use of clean electricity as an alternative to natural gas.</p> <p>By 2032, it is expected that through the Iron Main Replacement Programme, the level of methane leakage from network pipes would also reduce to 5%.</p> <p>BEIS will continue to work with Ofgem to explore additional options that would ensure methane leakage can be reduced to 0% post 2032.</p>
<p>Formalise the process, governance framework and timeline for decisions on the conversion to</p>	<p>There is already a range of work ongoing to explore the development of hydrogen networks. A variety of joint government and industry research, development and testing projects are</p>

hydrogen of appropriate parts of the gas pipeline networks. This should include starting a programme of research with Ofgem to identify areas which are unlikely to be suitable (such that electrification and alternatives can be prioritised), alongside priority candidate areas for hydrogen.

underway, designed to help determine the safety, feasibility, costs and benefits of converting the existing gas grid to carry 100% hydrogen. This includes identifying and characterising the possible options to transition the gas grid, including repurposing parts of the existing grid and/or building new infrastructure.

Building on work already underway, we will undertake a review of systemic hydrogen network requirements in the 2020s and beyond with an update on the status and outputs of the review to be published in early 2022.

Table A5

Recommendations for the Department for Environment, Food and Rural Affairs (Defra)

Response

Crosscutting

Implement measures to address **non-financial barriers to tackling emissions from land use and agriculture**, including awareness and improving skills in sustainable forestry and peatland management; scaling up supply chains; streamlining application processes and addressing contractual and tax issues where they are acting as barriers. Delivery plans should also set out measures to:

1. Improve knowledge exchange of low-carbon farming practices to provide confidence to farmers to take up measures to reduce on-farm GHGs.

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 greenhouse gas (GHG) emissions. The Government is contributing towards establishment of a new professional body, The Institute for Agriculture and Horticulture (TIAH) which is aimed at removing fragmentation that exists within the current learning and skills landscape for farming businesses, enabling the industry to drive forward greater uptake of skills. TIAH will drive improvements in industry capability – which will cover the skillsets required to deliver future Environmental Land Management objectives; including water and air quality, soil husbandry, woodland restoration

2. Improve the science and evidence base for woodlands and peatlands, to deliver GHG reductions and multiple other benefits, ensure the right tree is planted in the right place and that they are resilient to future climate impacts.

and management, agroforestry and biodiversity.

We are using nature-based solutions in the fight against climate change. For example, we have aligned our *England Trees Action Plan* with the *England Peat Action Plan* to deliver a joined up approach to land use management. This means we will only plant or naturally establish trees where doing so provides a net benefit to the environment, working with partners and the land-owner to make the best evidence-based decision for sites with peaty soils. Through Local Nature Recovery Strategies, landowners and communities will be able to target creation and maintenance of natural assets (such as through tree planting) where those are needed most.

Legislate the **Environment Bill** this year, using it to strengthen commitments on waste, resource efficiency, agriculture and land-use.

The Environment Bill will include powers to create extended producer responsibility schemes; introduce deposit return schemes; set minimum resource efficiency requirements for products; better control the export of plastic waste and set new charges for single-use plastic items.

The bill will enable us to require local authorities to collect food waste weekly, which would divert it from landfill and reduce emissions. Core recyclable waste streams will also be required to be collected and collections to be made more consistent.

Agriculture and land use have not been directly legislated for in the Environment Bill, as these are under the scope of the *Agriculture Act 2020*. However, tools delivered through the Environment Bill will be used to support future

		<p>Environmental Land Management Schemes.</p> <p>Local Nature Recovery Strategies will agree priorities for nature's recovery, map the most valuable existing areas for nature, and specify proposals for creating or improving habitat for nature and wider environmental goals.</p>
	<p>Develop (with DIT) the option of applying either border carbon tariffs or minimum standards to imports of selected embedded-emission-intense industrial and agricultural products and fuels. This should include initiating development of carbon intensity measurement standards and fostering international consensus around trade policies through the G7 and COP presidencies.</p>	<p>Answered in A1</p>
<p>Research and Data</p>	<p>Continue to monitor consumption emissions. These are important to ensure that action to decarbonise UK-based activities does not result in emissions moving offshore, and to track progress in decarbonisation of imports to the UK, which in turn can inform future policy (e.g. border carbon adjustments).</p> <p>Improve the collection and reporting of industrial decarbonisation data to allow for progress to be monitored more effectively, particularly on energy and resource efficiency.</p>	<p>Defra will continue to publish UK and England-level estimates of our carbon footprint on an annual basis. It is important that we monitor the carbon impact of our activities and account for emissions produced beyond our borders and throughout our supply chains. To support insight, these are broken down in several ways, including by source region, final demand, and product group.</p> <p>Answered in A4</p>

Nature and land use

Extend current ambition set out by the UK government and the devolved administrations to implement a comprehensive delivery mechanism to address **degraded peatland**:

1. 17% of upland peat is restored, equivalent to 200,000 hectares (and where this is not possible, stabilise the peat) by 2025; 58% by 2035 (700,000 hectares) and the remaining area by 2045.
2. Rewet and sustainably manage 12% of lowland peat used for crops by 2025 (24,000 hectares), rising to 38% by 2035 (72,000 hectares).
3. Rewet 8% of lowland grassland area by 2025 (3,000 hectares), rising to 25% by 2035 (54,000 hectares).
4. Remove all low-productive trees (i.e. less than YC8) from peatland (equivalent to 16,000 hectares by 2025), and restore all peat extraction sites by 2035 (equivalent to 50,000 hectares by 2025).

In the *England Peat Action Plan*^{xxxiii} Defra committed to fund at least 35,000 ha of peatland restoration by 2025, through the Nature for Climate Fund and other sources. However, this was just the start of our ambition for peatland restoration in England to 2050 and beyond. A new longer-term target for peatland restoration is being published in the *Net Zero Strategy*.

Extend current ambition set out by the UK government and the devolved administrations to implement a comprehensive **delivery mechanism for new woodland** to create at least 30,000 hectares per year across the UK by 2025 (in line with the Government's commitment) and an average

In the *England Trees Action Plan* we explained our intention to spend over £500 million of the £640 million Nature for Climate Fund on trees and woodlands in England between 2020 and 2025 to support this ambition.^{xxxiv} World leading planning and forest management will ensure that tree planting not only increases carbon sequestration but improves biodiversity and nature-based

of 40,000 hectares per year in the 2030s.

climate change adaptation. We will continue to see planting trends for majority native broadleaf woodlands, given the additional benefits they provide for nature and people. To prepare for increased planting beyond the end of this Parliament, we will work with the devolved administrations to deliver a UK-wide step change in tree planting and establishment. Furthermore, we will encourage greater private sector investment in trees and the valuable ecosystem services they provide.

Introduce legislation to:

1. Extend the **ban on rotational burning of peat** from certain protected upland bog sites to all peatland before the start of the burn season in 2021
2. End peat extraction, and ban its sale for all horticultural uses including in the professional sectors and apply this to imports by 2023.
3. Mandate water companies to restore peatland under their ownership.
4. Ensure lowland peat soils are not left bare.

Defra has brought forward legislation to introduce new restrictions on managed burning of heather on protected blanket bog, with a ban on burning unless covered by a license granted by the Secretary of State. The government will keep under review the environmental and economic case for extending the approach to additional areas of blanket bog after assessing how the new regime works in practice.

Defra will consult on banning the sale of peat and peat-containing products in the amateur sector by the end of this Parliament. Defra will publish a full consultation in 2021 to examine the feasibility of a range of measures to end the use of horticultural peat in both the amateur and professional sectors. Defra is also working with the water companies on their ambitious contribution to net zero, including their goal to restore 10,000 hectares of peat located in water sector owned land by 2023.

Defra will actively consider measures for peat soils as it develops new schemes for environmental land management.

Publish an overarching strategy that clearly outlines the relationships and **interactions between the multiple action plans** in development for the natural environment, including those for peat, trees, nature and plant biosecurity. This must clearly outline how the different strategies will combine to support the Government's climate change goals on both Net Zero and adaptation, along with the wider environment and other goals.

Acting as one of the key vehicles for delivering the bold vision set out in the *25 Year Environment Plan*^{xxxv}, the Environment Bill brings about urgent and meaningful action to tackle the environmental and climate crisis we are facing. The Environment Bill requires the government to have an Environmental Improvement Plan (EIP), covering at least 15 years and steps it intends to take to improve the environment. The government must report annually on implementation of the EIP and review it at least every five years. The government will conduct its first 5-yearly review of the *25 Year Environment Plan* by January 2023, as required by the current Environment Bill^{xxxvi}. This will consider progress, and further measures needed, towards environmental improvement. The bill requires that the first five-year review and refresh of the *25 Year Environment Plan* must be completed by 31 January 2023. The government must consider whether further or different steps are needed to improve the natural environment, as compared to those set out in the current plan, when reviewing or renewing an EIP.

Extend the statutory requirements of **marine plan policies** to the decisions of public and private organisations. At present only public authorities are duty bound under law to apply the plan policies to their decisions meaning there is a significant gap in the protections they are designed to provide.

Clause 66 of the *Marine and Coastal Access Act 2009*^{xxxvii} details marine activities that require a license. These include activities related to deposits, scuttling, construction, explosives, removals, dredging, and incineration. In addition, there is a large amount of other regulation that licensing authorities consider, such as: Offshore Marine Conservation Regulations 2007; Conservation of Habitats and Species Regulations 2010; Marine Works (EIA) Regulations 2017.

		<p>Any activity not covered by a consent (license, bylaw, permit etc.) is likely to have been determined as low impact from an environmental standpoint due to it being very small scale, short-term and / or not occurring in a sensitive area. In these cases, there is also the potential for non-statutory guidance to be applied e.g. as per wildlife watching relating to reducing disturbance impacts on species</p>
<p>Agriculture and food</p>	<p>Provide incentives and address non-financial barriers across all of the UK to:</p> <ol style="list-style-type: none"> 1. Plant trees on 2% of farmland by 2025 while maintaining their primary use, rising to 5% by 2035. 2. Extend hedgerows by 20% by 2035 and better manage existing hedgerows. 3. Increase the area growing energy crops across the UK to 6,000 hectares per year by 2025, and 30,000 hectares per year by 2035. 	<p>The government will be encouraging and supporting agroforestry through the new environmental land management schemes. A Hedgerow Standard has also been included within the initial phase of piloting of the Sustainable Farming Incentive scheme which will pay farmers to plant more hedgerows, leave them uncut or raise the cutting height.</p> <p>Biomass will be an important component of our pathway to net zero, and as we head towards 2050. The exact role that domestically grown perennial energy crops and short rotation forestry for use as biomass will play in achieving our net zero goals is yet to be determined, including rates of planting, the forthcoming Biomass Strategy, due to be published in 2022 will look to address this in further detail. The sustainability, and wider environmental impact of growing and using biomass, will be key factors in establishing this.</p>
	<p>Implement measures to encourage consumers to shift diets and reduce food waste across the supply chain, including:</p> <ol style="list-style-type: none"> 1. Low-cost, low-regret actions to encourage a 20% shift away from all 	<p>The UK is fully committed to meeting the UN Sustainable Development Goal (SDG) 12.3 target which seeks to halve global food waste at consumer and retail levels and reduce food losses by 2030. Following commitments from the <i>Resources and Waste</i></p>

meat by 2030, rising to 35% by 2050, and a 20% shift from dairy products by 2030. Develop an evidence-based strategy to establish options for successful behaviour shifts and demonstrate public sector leadership.

2. Policy to reduce food waste by 50% by 2030 and 60% by 2050, with the public sector taking a lead through measures such as target setting and effective product labelling.

Strategy^{xxxviii}, we will consult on introducing regulations to make the public reporting of food waste volumes mandatory for certain businesses of an appropriate size.

We support the Waste and Resources Action Programme (WRAP) and its work with retailers and other food businesses who play a key role in influencing household food waste through interventions such as pack sizing and product labelling. We are keen to work with industry to help them reduce their environmental impacts and provide this information clearly to consumers in an efficient manner, without creating unnecessary burdens, costs or time-lags.

Introduce a strong **post-CAP regulatory baseline**, and adopt and retain existing EU rules that benefit GHG mitigation into UK legislation. These include low-cost, low-regret on-farm measures to reduce emissions; extending coverage of Nitrate Vulnerable Zones across all of the UK; including measures that reduce enteric methane emissions in the Clean Air Strategy, specifically under the proposal to extend environmental permitting to the dairy and intensive beef sectors; and mandating UK feed producers to incorporate methane inhibiting additives in compound feed and mineral supplements.

The government is committed to maintaining a strong regulatory baseline, with enforcement mechanisms that are proportionate and effective. We keep our regulations under review, adapting standards over time as new research and evidence emerges. Domestic regulations will continue to be mandatory as we move away from CAP schemes, and we will maintain a robust inspection and enforcement approach.

The *Clean Air Strategy*^{xxxix} committed to extend Environmental Permitting to the intensive beef and dairy sectors. As part of this work the Environment Agency has established working groups with the farming industry to develop and agree best available techniques to limit pollution from the dairy and intensive beef sectors and has commissioned evidence to understand how greenhouse gas (GHG) emissions reductions might be included within the design of the system.

The government recognises the challenge of climate change and the need for swift action. Defra is looking at ways to reduce agricultural emissions controlled directly within the farm boundary, considering a broad range of measures including improvements in on-farm efficiency and the potential of methane inhibiting feed additives.

Introduce a comprehensive plan and incentives to deliver **emissions reduction across all UK farms** through:

1. High take-up of low-carbon agricultural measures (60-75% by 2050) covering livestock (diets, breeding, and health), soils (cover crops and grass-legume mix) & waste management (anaerobic digestion and slurry covers).
2. Measures to incentivise the take-up of near-zero-emissions options for agricultural machinery and vehicles from the mid-2020s, and develop options where they are not currently available.

The *Agriculture Transition Plan (2020)*^{xl} sets out how we will gradually reduce and then stop untargeted direct payments in England and instead use public money to reward farmers and land managers for delivering environmentally sustainable actions, through the Sustainable Farming Incentive (SFI), Local Nature Recovery (LNR) and Landscape Recovery (LR) schemes. These schemes will provide a powerful vehicle for achieving net zero emissions by 2050, supporting farmers to implement a range of low greenhouse gas (GHG) farming practices, improving productivity and reducing carbon intensity of farming through measures, with such practices becoming standard as we move towards 2050. The *Net Zero Strategy* will set out a range of specific commitments to further reduce emissions from agriculture.

We will support innovation funding to prepare key low carbon technologies for commercialisation and develop policies to promote the deployment of technological solutions and supporting infrastructure in specific sectors, as set out in the *Net Zero Strategy*.

The landscape-level and on-farm measures set out above should:

1. **Leverage private and public finance** (e.g. a trading scheme or auctioned contracts). New and existing funding streams should continue during the transition period to this system to avoid a hiatus in deployment.
2. Be accompanied by a strong **monitoring, reporting and verification** system that uses the latest monitoring tools and technologies to create a strong institutional framework to verify actions across the UK.

Beyond incentive schemes outlined in the *Agriculture Transition Plan*, we recognise the importance of regulation, tax and public expectations in encouraging the agriculture sector to succeed in meeting the national net zero ambition. There is a role for new market opportunities – as private markets in ecosystem services (such as carbon sequestration and storage and water management) develop and accelerate, further financial incentives will be created, encouraging the transition to practices that work towards our net zero goals.

We are supporting the acceleration of private investment in nature through initiatives such as the Natural Environment Readiness Fund and Big Nature Impact Fund. These will continue to test new models and build pipelines of investable projects, whilst providing technical assistance and capacity building to deliver opportunities for private investment. Projects will provide a return on investment by capturing the value of the carbon, water quality, biodiversity and other benefits provided by natural assets such as woodlands, peatlands, wetlands and river catchments, particularly when considered together as part of multi-functional landscapes.

Set out a strategy for decarbonisation of **off-road mobile machinery** and work with industry to identify potential policies to increase uptake of low-carbon off-road mobile machinery. This will require work across BEIS, DLUHC, DfT and Defra.

New technologies, particularly for small, light duty electrification equipment, have begun to penetrate the market, however, government intervention is likely to be necessary to ensure innovation continues and uptake is consistent with net zero.

Existing support includes work on the design of a red diesel low carbon fuel replacement.

		<p>In addition, government will develop policies to support the deployment of technology solutions and the required infrastructure. Further work is required to deliver this, but the package could include the following: signalling to the market to invest in the development of low carbon alternatives to diesel; financial incentives for market penetration of new technologies; support for skills; and a gradual regulatory phase-out of fossil fuels.</p>
<p>Waste</p>	<p>Introduce the necessary planning guidance and policy to ensure any new Energy from Waste plants (including incineration, gasification & pyrolysis facilities) are built with carbon capture usage and storage (CCUS) or are 'CCUS ready'.</p>	<p>Answered in A4</p>
	<p>Set out how existing Energy from Waste plants will be supported to be retrofitted with CCUS from late 2020s onwards, with 2050 a backstop date for full CCUS coverage.</p>	<p>Answered in A4</p>
	<p>Set out capacity and usage requirements for Energy from Waste consistent with plans to improve recycling and waste prevention. Issue guidance to align local authority waste contracts and planning policy to these targets.</p>	<p>Our view is that energy from waste should not compete with greater waste prevention, re-use or recycling, however, it does play an important role in diverting waste from landfill and is generally the best management option for most residual waste.</p> <p>In the <i>Resources and Waste Strategy</i> we committed to monitoring residual waste treatment capacity and we intend to publish a fresh analysis over coming months.</p>

Energy from waste is included within the draft revised National Policy Statement for Renewable Energy Infrastructure (EN-3) where we propose to include a requirement that any schemes must demonstrate their conformity with the waste hierarchy and be of an appropriate type and scale so as not to prejudice the achievement waste management targets.

Moreover, The National Planning Policy for Waste (NPPW) sets out detailed waste planning policies and should be read in conjunction with the *National Planning Policy Framework*^{xli}, the *Waste Management Plan for England*^{xlii} and National Policy Statements for Waste Water and Hazardous Waste^{xliii}, or any successor documents. Waste planning will be considered as part of the reform package. Our consultation response will set out our next steps.

Set out funding arrangements for local authorities to provide the recycling, composting and waste management services and infrastructure required to deliver at least the commitments in the Environment Bill, Waste Prevention Programme and Resources and Waste Strategy, by 2022.

The Waste Infrastructure Delivery Programme (WIDP) was established 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 was established in 2006 and runs until 2042.

Through the Waste Infrastructure Delivery Programme, the government is committed to spending £3 billion by 2042 on developing new waste infrastructure.

As part of the wider programme of major waste reforms our reform of the packaging sector which will see firms covering the full net cost

of managing their packaging waste handled by local authorities

The introduction of consistent collections of household and business waste, which will be introduced via the Environment Bill, will mean local authorities are required to separately collect a core set of materials for recycling, including paper and card, glass, metal, plastic, food waste and household garden waste. This will ensure that the quantity and quality of materials collected for recycling increases, and that significant volumes of biodegradable waste will be diverted from landfill. We will continue to assess the impacts of our major waste reforms on future waste infrastructure needs.

Consult on the introduction of a **carbon tax** (either as part of the UK ETS or a separate instrument) aimed at curbing rising emissions from Energy from Waste.

Answered in A3.

Set a target for a 68% **recycling rate** by 2030 covering all wastes in England via the Environment Bill and announce new policies to meet this target. Northern Ireland to set a 70% target for 2030. Scotland and Wales to set new targets for 2030 that go beyond their 70% targets for 2025.

The government has committed to recycle 65% of municipal waste by 2035, with less than 10% municipal waste going to landfill. We set out measures to achieve this target in our 2018 *Resources and Waste Strategy* and the Environment Bill.

We have also published plans for monitoring and evaluating progress on the Resources and Waste Strategy and will continue to publish annual recycling statistics.

We are currently working to set the long-term commitments of the Resources and Waste Strategy into legislation. We will set at least one legislative target in the area of

		<p>“resource efficiency and waste reduction” under the Environment Bill. We have been engaging publicly on this and will continue to do so in the coming year, culminating in consultation planned for early 2022.</p>
	<p>Composting facilities should be incentivised to install forced aeration as a method of reducing on-site emissions.</p>	<p>We will continue to work with the Environment Agency and assess any new technologies in the composting process which may reduce emissions from composting facilities as we look to increase rates of organic recycling.</p>
	<p>Mandatory business food waste reporting to be introduced by 2022, building on WRAP’s existing voluntary scheme.</p>	<p>In the <i>Resources and Waste Strategy</i> (2018) the government committed to consult on introducing mandatory reporting of food waste by certain businesses of an appropriate size. We will consult on introducing regulations to make the public reporting of food waste volumes mandatory for certain businesses of an appropriate size. By ensuring businesses are measuring and publicly reporting their food waste, we expect to drive action to reduce it. We will be consulting on implementation timelines in the consultation.</p>
	<p>Legislate for (in England via the Environment Bill, and in Wales, Scotland, and Northern Ireland via new legislation) and implement a ban on landfilling of the main biodegradable waste streams from 2025 (both municipal and non-municipal). There must be sufficient recycling/composting/ AD treatment capacity made available before the ban comes into force, so that significant increases in</p>	<p>The <i>Resources and Waste Strategy</i> sets out how we will explore policies to work towards eliminating all biodegradable waste to landfill. We have already significantly reduced the amount of biodegradable municipal waste being sent to landfill, with just 21% of 1995 levels going to landfill in 2017.</p> <p>The introduction of consistent collections of household and business waste, via powers in the Environment Bill, will allow us to require Local Authorities to separately collect a core set of</p>

energy-from-waste are avoided.

materials for recycling, including: paper and card, glass, metal, plastic, food waste and household garden waste. This will ensure that the quantity and quality of materials collected for recycling increases, and that significant volumes of biodegradable waste will be diverted from landfill. We will continue to assess the impacts of our major waste reforms on future waste infrastructure needs.

Long-term plans should be announced for eventual **diversion of all wastes from landfill** (except for where no alternative treatment or disposal method exists) but with a date conditional on sufficient action on reduction, re-use and recycling, and installation of CCS at energy-from waste plants, to avoid a surge in fossil emissions when the ban comes into force.

The *Resources and Waste Strategy* sets out our ambition of a 65% recycling rate for municipal solid waste, with less than 10% ending up in landfill, both by 2035. The waste hierarchy is both a guide to sustainable waste management and a legal requirement, enshrined in law through the Waste (England and Wales) Regulations 2011. Priority goes to preventing the creation of waste in the first place, followed by preparing waste for reuse; to recycling, and then recovery. The proposals set out in the draft Waste Prevention Plan aim to reduce overall levels of waste which should naturally over time result in a reduction of waste to landfill and incineration.

The *Resources and Waste Strategy* analysed the challenges currently facing the recycling industry in this country, setting out how we would tackle these challenges. This includes making producers more responsible for the products they put on the market, starting with reforming the packaging waste regulations, and making recycling simpler for households.

We have also recently announced our intention to consult on banning single-use plastic plates, cutlery

and expanded and extruded polystyrene beverage containers this Autumn 2021. We will, however, continue to take a systematic approach to reducing the use of unnecessary single-use plastic.

Introduce policies and funding for increased **methane capture and oxidation at landfill sites**, to decrease fugitive landfill methane emissions significantly.

In the *Resources and Waste Strategy* we said we would undertake research and analysis to support new approaches to landfill aftercare management. We are currently carrying out research exploring methods to mitigate methane emissions from legacy landfills.

Phase out **exports of waste** by 2030 at the latest, through improvements in waste prevention and domestic recycling and recovery, while strengthening tracking and enforcement to ensure that any exports intended for recycling are being treated appropriately.

Our *Resources and Waste Strategy* sets out how we will preserve our stock of material resources by minimising waste, promoting resource efficiency, and moving towards a circular economy. We want to promote UK-based recycling and export less waste to be processed abroad. We are recycling more in the UK than ever before. This is not only good for the environment but can boost economic growth and create jobs.

Through the Waste Infrastructure Delivery Programme, the government is committed to spending £3 billion by 2042 on developing new waste infrastructure in the UK.

Where the UK cannot currently recycle materials economically, or does not have the specialised facilities to dispose of certain hazardous wastes, managed exports can help ensure those materials can still be recycled or disposed of in recipient countries in an environmentally sound manner. While there is a legitimate

		<p>global market for secondary materials, it must be and is subject to strict controls.</p> <p>The UK Government does however recognise that some importing countries have difficulty dealing with plastic waste exports. The government has therefore committed to banning exports of plastic waste to non-OECD countries and we plan to consult publicly by the end of 2022 on options to deliver the ban. Defra has commissioned research to better understand plastic waste recycling capacity in the UK and OECD member countries, and this research will be key to the development of policy options ahead of the public consultation.</p>
<p>Greenhouse gas removals and offsets</p>	<p>Build on the recently commenced innovation programmes (with BEIS), the Direct Air Capture and other Greenhouse Gas Removals Competition and UK Greenhouse Gas Removal Demonstration Programme, to support both the demonstration and commercialisation of more advanced greenhouse gas removal technologies (taking these from technology readiness level 5 to 8), and alongside undertake research and development into less advanced removal approaches including through pilots and field experiments.</p>	<p>Answered in A4</p>
	<p>Align with adaptation policies to ensure long-term resilience and effectiveness of GGRs in the face of climate impacts and exploit potential for co-benefits (e.g. choice of tree</p>	<p>Answered in A4</p>

	<p>species, protecting new infrastructure from flood risks).</p>	
<p>Resource efficiency</p>	<p>Consider (with BEIS) the appropriate regulatory arrangements, rules and guidance for the use of carbon offsetting by UK corporates within their Net Zero strategies, recognising the growing demand for offsetting markets, the interactions with the UK ETS and currently accredited schemes (i.e. the Woodland Carbon Code and the Peatland Code), and the need to avoid double-counting or negative outcomes for non-carbon objectives.</p> <p>Step up efforts to deliver the waste prevention and resource efficiency improvements required as part of the pathway to Net Zero, including by:*</p> <ul style="list-style-type: none"> • Accelerating delivery of the Waste Prevention Programme so that key policies, such as Extended Producer Responsibility and new product standards, are on track to be in place well before 2025. • Setting out how levels of resource efficiency improvements identified within the Industrial Decarbonisation Strategy will be delivered. • Beginning to develop and implement any additional policies needed to deliver these resource 	<p>Answered in A4</p> <p>We consulted on a new draft Waste Prevention Programme for England – Towards a Resource Efficient Economy (WPP), between March and June 2021. This builds on the 2018 <i>Resources and Waste Strategy</i> and seeks to agree a programme which helps with our strategic goals of reducing greenhouse gas emissions and achieving net zero, Responses to the consultation are being analysed and we expect to publish the new Waste Prevention Programme by the end of 2021. In relation to key sectors, progress has been made:</p> <ul style="list-style-type: none"> • on construction, supporting the launch of the Green Construction Board’s routemap towards Zero Avoidable Waste; • on electronics, supporting regulatory measures introduced by BEIS that increase durability, repairability and recyclability; and

efficiency improvements, by the end of 2022.

- Ensure cross-departmental working, potentially through new cross-Whitehall governance focused on resource efficiency.

- on textiles, establishing a new industry-led voluntary agreement (Textiles 2030) which has a greater focus on increasing circularity.

Work is ongoing to identify the sectors/product groups as well as policy measures that will deliver high levels of carbon reduction at a low cost

A cross-Whitehall working group has been initiated to prioritise the most effective resource efficiency measures which could be delivered in the near term. To accelerate progress and facilitate cross-Whitehall working this will be expanded to include representatives from BEIS, Defra, DLUHC, DfT and HMT.

Consult on detailed proposals for **product standards and extended producer responsibility** to improve the resource efficiency of consumer goods' lifecycles. The proposals should include all consumer goods with high environmental impact and cover how products are made, through indicators such as the level of recycled content and critical material content, and the repairability, durability and upgradability of a product.

In addition to packaging, we will consult on potential reforms of all our existing producer responsibility schemes. These include schemes for batteries and end of life vehicles, and waste electronic and electrical equipment. We have recently consulted on our detailed proposals for packaging extended producer responsibility and consultations on waste electricals and batteries are due to be issued later in 2022. End-of-life vehicles will follow.

Additionally, we have committed to review and consult on measures such as extended producer responsibility and product standards for five new waste streams, by the end of 2025. We are conducting research on textiles and end-of-life fishing gear to inform the development of policy proposals and will consult stakeholders on options for these by the end of 2022.

Develop policies (with BEIS, DLUHC and DfT) to drive more **resource-efficient construction** and use of existing low-carbon materials, including a substantial increase in the use of **wood in construction**. Policies should include:

1. Reviewing and clarifying the position of structural timber in the ban on combustible materials, underpinned by further research and testing where necessary, and ensuring there are no barriers to the safe use of timber in buildings. Buildings safety regulator to play a role in overseeing this on an ongoing basis.
2. The development of a fully funded policy roadmap on the use of timber, including policies to support the development of UK wood supply chains.
3. Finalising the reporting methodology for whole-life carbon standards.
4. Setting out a plan for phasing in mandatory whole-life reporting followed by minimum whole-life standards for all buildings, roads and infrastructure by 2025, with differentiated targets by function, scale, and public/private construction.

The government has pledged to support the safe use of timber in construction to replace higher-carbon construction materials by:

- working with key construction stakeholders to develop a policy roadmap on use of timber, and to explore with Homes England ways to increase timber use in the delivery of housing programmes;
- increasing public demand for sustainably sourced domestic timber by amending our Timber Procurement Policy;
- encouraging research into barriers to uptake of timber, including looking at timber strength grades and the fire resistance of engineered timber structures;
- driving an increase in the use of Modern Methods of Construction, some forms of which can encourage use of sustainable materials such as timber; and
- providing financial support to develop innovative timber products through the Forestry Innovation Fund.

As we transition to a net zero economy, reducing these emissions and increasing the use of low-carbon materials in construction will be vital.

- We are working across Government and Industry to develop and test Whole Life Carbon methodologies for major built assets.
- We intend to carry out some longer-term work to consider the future of energy efficient buildings beyond the Future Homes Standard and the Future Buildings Standard, which

will enable us to examine wider and more fundamental questions around how we can ensure that all new buildings are designed and constructed to be fit for a zero-carbon future. We expect this work to consider embodied carbon.

- We have worked with the Green Construction Board to publish the industry-led Route map to Zero Avoidable Waste in Construction, which sets out what the sector needs to do move towards greater resource efficiency and minimised waste.

Work with business to encourage and enable consumers to share, lease and use products for longer whilst **discouraging 'disposable' business models.**

Driving more sustainable product design so that products last longer through multiple use phases is one of the ambitions detailed in our draft 2021 Waste Prevention Programme. To achieve this, we will develop proposals focussed on the highest impact product groups that combine producer responsibility, product standards, and information or labelling. Used together, these measures can support a shift to more circular business models both by enabling consumers to make more sustainable decisions and by incentivising design for multiple uses and longer lifetimes.

In the forthcoming consultation on our review of the waste electronic and electrical equipment regulations, we will test the possibility of using circular business models as a basis for modulation of the producer obligation.

Commit innovation funding to development and demonstration of novel

We are considering a number of measures, including monitoring emissions and the subsequent

	<p>wastewater treatment process that achieve a step change improvement in direct process emissions.</p>	<p>optimisation of existing operations to enable the water industry to assess municipal wastewater emissions and then minimise process and other emissions using improved technologies and processes at pilot sites.</p>
	<p>Outside of the municipal wastewater sector, incentivise industrial wastewater plants to reduce their process emissions.</p>	<p>We are looking to work with the Environment Agency and industry to reduce emissions from industrial wastewater plants.</p>

Table A6

Recommendations for the Department for Transport (DfT)

Response

Cross-cutting

Decisions on **investment in roads** should be contingent on analysis justifying how they contribute to the UK’s pathway to Net Zero. This analysis should demonstrate that the proposals would not lead to increases in overall emissions. Wherever possible, investment in roads should be accompanied by proportionate investment in EV charging infrastructure and in active travel and public transport.

Continued investment in our roads is necessary to ensure the functioning of the nation and to reduce congestion – a major source of emissions. Almost half of our £27 billion programme for England’s strategic roads is for renewing, maintaining, and operating the existing network, or for funds to improve safety and biodiversity, deliver active travel schemes and tackle noise and other pollution. In *Decarbonising Transport: A Better, Greener Britain* we committed to reviewing the current National Policy Statement on National Networks in light of recent developments including the government’s legal commitment to net zero and the Sixth Carbon Budget.

Develop policies (with BEIS, Defra and DLUHC) to drive more **resource-efficient construction** and use of existing low-carbon materials. DfT’s focus should be on:

DfT has initiated a Carbon Management Programme to embed an integrated system for managing whole life carbon of infrastructure projects at a portfolio level. The framework will include Capital Carbon, i.e. emissions associated with the creation or major modification of an infrastructure

	<ul style="list-style-type: none"> • Finalising the reporting methodology for whole-life carbon standards • Contributing to a plan for phasing in mandatory whole-life reporting followed by minimum whole-life standards for all roads and infrastructure by 2025, with differentiated targets by function, scale, and public/private construction. 	<p>asset and will be guided by the principles of PAS 2080 – the foremost industry-wide standard for carbon management.</p>
<p>Electric vehicles</p>	<p>Develop a comprehensive policy package to support the supply and uptake of EVs to enable delivery of the 2030 phase-out of new petrol and diesel cars and vans. This will require:</p> <ul style="list-style-type: none"> • Strong consumer incentives to purchase zero-emission vehicles, whether in the form of purchase subsidies or preferential tax rates and duties. These should be fair across consumer groups and scaled back as costs of EVs fall. • Introducing a zero-emission vehicle mandate requiring car manufacturers to sell a rising proportion of zero-emission vehicles (specifically, fully battery-electric vehicles), reaching nearly 50% by 2025 and 100% by 2030, with only a very small proportion of hybrids allowed alongside until 2035. This will benefit air quality and consumers, as well as greenhouse gas emissions. • Setting out ambitious UK regulations on new car 	<p>We published the 2035 delivery plan^{xliiv} in July 2021, consolidating measures for decarbonising cars and vans:</p> <ul style="list-style-type: none"> • benefit-in-kind tax rates for zero emission vehicles (ZEVs) extended at the March 2020 Budget, saving drivers up to £2000 annually; • 1% company car tax on ZEVs in FY21/22 and 2% from FY22/23 to FY24/25; • ZEVs exemption from vehicle excise duty; • £582 million more in plug-in grants from FY20/21 – FY22/23; and • £1.3 billion to support charging infrastructure rollout. <p>As market competitiveness increases, there will be less need for direct government grants; we will deliver a managed exit from plug-in grants in due course.</p> <p>Our July 2021 green paper^{xliv} consulted on possible regulatory frameworks to facilitate the transition to 100% ZEV sales, including a ZEV mandate. It also sought to define ‘significant zero emission capability’ for new cars and vans sold between 2030 and 2035. We aim to introduce a new road vehicle CO₂ emissions regulatory regime in 2024 and have</p>

and van CO₂ intensities to 2030, with more regular intervals than the EU's five years, requiring around a 55% reduction by 2025 and 97% by 2030.

announced we will introduce a ZEV mandate to deliver our end of sales dates for new petrol and diesel cars and vans.

Continue to support widespread deployment of **EV charging infrastructure**:

- This should ensure it can support high EV uptake levels. Project Rapid has the right ambition for the strategic road network and should be developed into a full strategy for the 2020s and beyond.
- Further investment is needed to support on-street and other urban charging solutions for those without off-street parking and destination charging.
- Government should aim for there to be around 150,000 public charge points operating by 2025. These should be widely available across all regions of the UK.
- Implement the recommendations of the EV Energy Taskforce, in particular improving the consumer charging experience and making smart-charging accessible, appealing and cost effective for as many EV users as possible.

The upcoming EV Infrastructure Strategy (in 2021), sets out our charging infrastructure rollout plans to ensure no part of the country is left behind in the EV transition. It will set out a framework that reflects current demand uncertainties, is flexible to local needs and responsible to rapidly changing technologies.

Ofgem are enabling £300 million in low carbon electricity distribution and transmission projects, including supporting rapid charging infrastructure, alongside introducing changes to network reinforcement costs and directing distribution network operators (DNOs) to consider EV forecasts in their business plans.

Government support for on-street charging includes:

1. £20 million On-Street Residential Chargepoint Scheme.
2. £90 million Local EV Infrastructure Fund (launching in 2022) for larger on-street charging schemes.

16 of 21 EV Energy Taskforce proposals are being progressed. The remainder are reviewed annually.

We aim to legislate in 2021 to improve the consumer experience of public charging (regarding data,

reliability, payment and pricing transparency) and to mandate smart charging capability in private chargepoints.

We will work with stakeholders to make trusted consumer information easily available.

Produce a clear assessment of how best to re-use and **recycle EV batteries** and fund development of competitive, large-scale battery recycling facilities in the UK.

We want to create a circular economy for EV batteries to maximise economic and environmental opportunities. This involves work in three areas:

1. Innovation: the £318 million Faraday Battery Challenge is tackling the technical challenges of reusing and recycling battery components, with an aim of making them 95% recyclable by 2035, from 10-50% today.
2. Infrastructure: the UK is developing the infrastructure to enable EV batteries to be reused in second-life applications and recycled at end-of-life. E.g. the Advanced Propulsion Centre has provided grant funding to the RECOVAS project, to develop the UK's first commercial-scale EV battery recycling facility.
3. Regulatory environment: The 2009 Waste Batteries Regulations ban EV batteries incineration or landfill disposal. Battery producers are obligated to take back EV batteries free-of-charge and treat them at approved facilities. We need to reassess this framework for large numbers of EV batteries and are reviewing the existing waste battery recycling legislation.

Public transport and active travel

Strengthen support for, and provision of, schemes to support **walking, cycling and public transport** to reduce demand for higher-carbon travel:

- Provision of infrastructure for active travel and other support schemes, as well as measures to make it less attractive to drive, are needed.
- This should include maintaining positive behaviour shifts and addressing risks resulting from the COVID-19 pandemic.
- Working across delivery bodies (e.g. local authorities) is critical.

The *Transport Decarbonisation Plan* (TDP) reaffirmed the Prime Minister's vision, made in *Gear Change: a bold vision for cycling and walking*^{xlvi} (July 2020), for half of all journeys in towns and cities to be cycled or walked by 2030. This vision is backed with £2 billion of investment and was followed by the publication of *Gear Change: One Year On*^{xlvii}, which increased funding to £338 million this financial year and celebrated what has been achieved in the past twelve months.

The TDP also outlined a new commitment to deliver a world class cycling and walking network in England by 2040.

The TDP published deliberative research to understand the complexities and drivers of current and sustainable travel behaviour, the impact of the pandemic and what interventions will encourage more sustainable travel practices. The findings will be incorporated into our future policy making.

Government should support the **public transport and shared mobility** sectors to recover from the COVID-19 pandemic:

- Positive communications and messaging will be required to rebuild public confidence in the safety of public transport.
- Financial support for the sector should be maintained while confidence and demand are rebuilt, to avoid the risk of operators cutting service provision.
- Government should seek to reverse the increasing relative price advantage of car travel over public transport.

COVID-19 has significantly disrupted travel demand, patterns and behaviour, and recovery will take time. DfT provided around £13 billion of unprecedented financial support to the sector in FY20/21, ensuring that essential travel could continue. We will continue funding to maintain vital UK connectivity and support recovery.

To achieve the transition to net zero and reduce air pollution and congestion, higher public transport patronage is essential. We will continue to progress our public transport reform agenda, as outlined in *Bus Back Better*^{xlviii} and the *Great British Railways: Williams-Shapps Plan for Rail*^{xlix}, to improve convenience, affordability, and reliability.

The government's safer travel guidance for passengers^l sets out considerations to improve public confidence in using the network. The safer transport guidance for operators^{li} has encouraged the introduction of additional measures to support people to return to the network. There are also several government and industry-led campaigns planned or underway to encourage people back onto public transport.

Set out a clear vision to deliver Net Zero in **rail**, and support Network Rail and other bodies in delivering the target to remove all passenger diesel trains by 2040. This should cover a mix of zero-emission technologies (e.g. track electrification, battery-electric, hydrogen and hybrid trains). The strategy should be published by 2021 as recommended by the National Infrastructure Commission.

In *Decarbonising Transport: A Better, Greener Britain*, we committed to delivering a net zero rail network by 2050, with sustained carbon reductions in rail along the way. We also re-stated our ambition to remove all diesel-only trains (passenger and freight) from the network by 2040. To deliver on these commitments, we will implement an ambitious, sustainable, and cost-effective programme of electrification between now and 2050 and deploy hydrogen and battery trains on some lines, where they make operational and economic sense.

Mandate a **phase-out** of new sales of all **diesel buses and coaches** by 2040 at the latest.

- This should include a requirement for new sales of diesel vehicles operating on shorter, urban routes to end considerably sooner.
- Local authorities should be empowered to continue driving zero-emission bus take-up and to deliver improvements to bus services.

2040 is the UK backstop date for the end of sales of all new non-zero emission road vehicles. We will consult this year on an end date for the sale of new non-zero emission buses and the appropriate supporting policy/regulatory framework. We will also consult on an end date for the sale or purchase of new non-zero emission coaches.

We will provide local transport authorities with £120 million in 2021-22 through the Zero Emission Bus Regional Scheme which could support up to 500 zero emission buses and associated infrastructure. This is on top of the £50 million for the Coventry All Electric Bus City

		<p>which could support up to 300 zero emission buses and associated infrastructure. We will also increase the Bus Service Operators Grant for zero emission buses to 22p per km, from April 2022.</p> <p><i>Bus Back Better</i> set out how access to bus transformation funding will require local transport authorities to publish a Bus Service Improvement Plan (BSIP) and commitment to bus franchising or enhanced partnerships.</p>
<p>Freight and off-road mobile machinery</p>	<p>Implement large-scale trials of zero-emission HGVs in the early-2020s to demonstrate the commercial feasibility of these technologies and establish the most suitable and cost-effective technology mix.</p>	<p>We are investing £20 million this financial year to support industry to design cost-effective, zero emission HGVs and refuelling infrastructure trials across the UK. Turning designs into full trials in future years (subject to funding) will inform decisions on the best route to a fully zero emission UK road freight sector. We are proposing that future years trials focus on the technologies of battery electric, electric road systems and hydrogen fuel cell HGVs.</p>
	<p>Set out and implement a strategy to transition to zero-carbon freight, including:</p> <ul style="list-style-type: none"> • Ending sales of new diesel HGVs by 2040 at the latest. • Stronger purchase and other incentives for zero-emission HGVs. • Infrastructure plans and support (e.g. ultra-rapid chargers for battery-electric HGVs and hydrogen refuelling stations for hydrogen HGVs). • Clean air zones. 	<p>We are consulting on ending the sale of new non-zero emission HGVs by 2035 for vehicles 26 tonnes and under, and 2040 for vehicles over 26 tonnes.</p> <p>Measures to accelerate new zero emission HGV deployment include:</p> <ol style="list-style-type: none"> 1. funding to continue the plug-in truck grant to FY22/23. Grants up to 20% of the purchase price are available, with £25,000 available for the largest HGVs; and 2. maintaining the fuel duty differential up to 2032 (subject to review in 2024) to encourage use of alternative lower-emission gaseous fuels.

HGV refuelling infrastructure roll-out will be informed by our £20 million Zero Emission Road Freight Trials. OZEV relationships with National Grid, Distribution Network Operators and Ofgem will be used to assess HGV and wider freight energy infrastructure requirements, which will remain under review.

We have published a *Clean Air Zone Framework*ⁱⁱⁱ to support local authorities and the Local Authority Toolkit will provide guidance for wider schemes.

Implement schemes to **reduce HGV and van use** in urban areas (e.g. e-cargo bikes and use of urban consolidation centres), to reduce traffic and improve the safety of active travel.

Transforming the 'last mile' into an efficient, sustainable delivery system will include:

1. consulting on amending the Traffic Regulation Order legislative framework in 2021 to reduce the number of vehicle movements;
2. researching the legal and practical issues with compulsory consolidation centres, setting the groundwork for consolidated, zero emission last-mile urban deliveries;
3. allowing some local authorities to pilot franchising certain delivery and waste management services;
4. considering opportunities for joint collection of municipal waste; and
5. supporting introduction of clean air zones, including working to reduce local businesses' vehicle mileage.

Plug-in grants, confirmed until FY22/23, will provide up to 35% for qualifying vans and up to 20% of qualifying trucks.

We will set out plans for a zero emission transport city, including cycle lanes, zero emission buses, a ban on nearly all petrol and diesel vehicles in the city centre and

		<p>deliveries using consolidation hubs and zero emission last-mile transport.</p>
	<p>Set out a strategy for decarbonisation of off-road mobile machinery and work with industry to identify potential policies to increase uptake of low-carbon off-road mobile machinery. This will require work across BEIS, DLUHC, DfT and Defra.</p>	<p>New technologies, particularly for small, light duty electrification equipment, have begun to penetrate the market, however, government intervention is likely to be necessary to ensure innovation continues and uptake is consistent with net zero. Existing support includes work on the design of a red diesel low carbon fuel replacement.</p> <p>In addition, government will develop policies to support the deployment of technology solutions and the required infrastructure. Further work is required to deliver this, but the package could include the following: signalling to the market to invest in the development of low carbon alternatives to diesel; financial incentives for market penetration of new technologies; support for skills; and a gradual regulatory phase-out of fossil fuels.</p>
Shipping	<p>Build on the Clean Maritime Plan and formal inclusion of international shipping in CB6 and Net Zero to set a Net Zero 2050 goal for UK shipping (including international shipping) and a pathway to get there.</p>	<p>We have committed to plotting a course to net zero for the UK domestic maritime sector, with indicative targets from 2030 and net zero as early as is feasible. We will establish this ambitious “course to zero” following public consultation in 2022, embedding it in our <i>Clean Maritime Plan</i>.^{liii}</p> <p>This year, we have launched a £20 million Clean Maritime Demonstration Competition (CMDC), to fund feasibility studies and technology trials in zero emission shipping technologies. We will consult this year on the appropriate steps to support and, if needed, mandate the uptake of shore power in the UK. We will explore the establishment of a UK Shipping Office for Reducing Emissions (UK-SHORE), a</p>

dedicated unit within DfT focused on decarbonising the maritime sector. UKSHORE will build on the success of the CMDC, delivering a suite of interventions inspired by our experience decarbonising other transport modes, looking at the Office for Zero Emission Vehicles (OZEV) and the Future Fuels for Flight and Freight Competition.

Take a leadership role in working with the **International Maritime Organisation** (IMO) and other willing partners on global shipping policies, research funding, tighter efficiency targets and other initiatives to reduce shipping emissions. Work to strengthen the IMO 2050 global target.

We will press for greater ambition during the 2023 review of the *International Maritime Organization (IMO) Initial Greenhouse Gas Strategy* and support a strengthened target of zero emissions by 2050. We will promote close alignment with the Paris temperature goals and challenge the international community to deliver on the initial strategy commitment to 'phase out' emissions from the international sector as soon as possible. We will participate in Mission Innovation's Zero Emission Shipping Mission as a core member, contributing to the work of the mission to scale up zero emission shipping by 2030.

Commit to the UK's first **clean maritime cluster(s)** operating at commercial scale (supplying at least 2 TWh/year of zero-carbon fuels) by 2030 at the latest, with zero-carbon fuels expanding to 33% of UK shipping fuel use by 2035.

As set out in the *Clean Maritime Plan* (2019), we expect to build a number of clean maritime clusters combining innovation and infrastructure for the use of zero emission propulsion technologies. The department has since published research on maritime clusters for clean growth (June 2021) which provides an initial overview of potential UK zero emission shipping clusters. We will build on this research and other initiatives such as the Teesside Hydrogen Hub to support the development of clean maritime clusters in the UK.

Continue **innovation and demonstration support for zero-carbon fuel** technologies and their use in shipping, and ship efficiency

The £20 million Clean Maritime Demonstration Competition (CMDC) will support and accelerate the research, design and development of zero emission shipping

	<p>measures. Develop incentives for zero-carbon ammonia and hydrogen supply chains.</p>	<p>technology and greener port infrastructure solutions, including zero carbon fuels and related infrastructure. The CMDC will run for a year from March 2021 and provide support to projects that contribute to both reducing emissions in the near term and demonstrating how the sector can transition to net zero operations.</p> <p>Per the commitment included in <i>the Clean Maritime Plan (2019)</i>, the government publicly consulted on whether and how the Renewable Transport Fuel Obligation (RTFO) could be used to encourage the uptake of low carbon fuels in maritime. As part of its response to this consultation, the government set out that it intends to make renewable fuels of non-biological origin used in maritime, such as hydrogen and ammonia, eligible for reward under the RTFO, incentivising their supply chains.</p>
	<p>Provide support for ports' investment in shore power and electric recharging infrastructure.</p>	<p>We will consult in winter 2021 on how government can support the wider deployment of shore power, including consideration of regulatory interventions, for both vessels and ports, that could drive deployment as we transition to net zero.</p>
	<p>Start monitoring non-CO₂ effects of shipping and decide on how best to tackle them alongside UK climate targets.</p>	<p>We will review, and if appropriate amend, the operation of the UK's existing monitoring, reporting and verification system for GHG emissions from international shipping, to ensure it is fit for purpose and delivering the information we need.</p>
<p>Aviation</p>	<p>Commit to a Net Zero goal and pathway for UK aviation as part of the forthcoming Aviation Decarbonisation Strategy, with UK international aviation reaching Net Zero emissions by 2050 at the latest, and</p>	<p>In July, the <i>Jet Zero</i> consultation was published which outlines our vision for the aviation sector to reach net zero – or Jet Zero - by 2050.^{liv} We commit to reaching net zero emissions by 2050 and are consulting on a target for UK</p>

domestic aviation potentially earlier. Plan for residual emissions (after efficiency, low-carbon fuels, and demand-side measures) to be offset by verifiable greenhouse gas removals, on a sector net emissions trajectory to Net Zero.

domestic aviation to reach net zero by 2040.

The consultation outlines five core policy measures to achieve net zero aviation, including in-sector reductions such as system efficiencies, sustainable aviation fuel (SAF) and zero-emission flight, and the development and implementation of carbon markets and greenhouse gas removal methods to offset residual emissions. The consultation proposes to set a CO₂ emissions reduction trajectory for aviation from 2025 to 2050 against which we will monitor progress, with the strategy reviewed every five years and the approach updated if needed.

Assess the Government's **airport capacity strategy** in the context of Net Zero and any lasting impacts on demand from COVID-19, as part of the aviation strategy. There should be no net expansion of UK airport capacity unless the sector is on track to sufficiently outperform its net emissions trajectory and can accommodate the additional demand. A demand management framework will need to be developed (by 2022) and be in place by the mid-2020s to annually assess and, if required, control sector GHG emissions and non-CO₂ effects.

Flying is a social and economic good, and one that we wholeheartedly support as a key part of building a global Britain. We currently believe that the aviation sector, even if returning to a pre-COVID-19 demand trajectory, can achieve Jet Zero without the government needing to intervene directly to limit aviation growth. DfT analysis shows that there are scenarios where we can achieve our net zero targets by focusing on new fuels and technology, rather than capping demand, with knock-on economic and social benefits.

As a responsible government, we recognise that we will need to keep our strategy under review. As such, we intend to assess progress on the sector's CO₂ emission reduction pathway and our strategy for delivering through five-year reviews.

Take a leadership role within the **International Civil Aviation Organisation** (ICAO), and work with other high-ambition nations, to set a long-term goal for aviation

A long-term climate goal for international aviation through the UN International Civil Aviation Organization (ICAO), which is consistent with the global temperature goals of the Paris

consistent with the Paris Agreement, strengthen the CORSIA scheme and align CORSIA to this long-term goal.

Agreement, remains a top priority. We will build on the success of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) to negotiate for the adoption of an ambitious goal by ICAO's next Assembly in 2022.

Continue innovation and demonstration support for **sustainable aviation fuel** (SAF) technologies, aircraft efficiency measures, hybrid, full electric and hydrogen aircraft development and airspace modernisation. Set out a policy package for supporting the nearerterm deployment of commercial SAF facilities in the UK (with carbon capture and storage where applicable). Longer-term, support for SAF should transition to a more bespoke, enduring policy to drive uptake.

The *Jet Zero* consultation sets out measures to deliver net zero aviation by 2050, including developing a UK SAF industry, accelerating zero emission aircraft development, and increasing current system efficiency.

Our ambition is to enable the delivery of 10% SAF by 2030.

We are supporting the early development of UK SAF plants through the £15m Green Fuels, Green Skies competition, launched in 2021, and the ongoing Future Fuels for Flight and Freight Competition. Building on these competitions, we will make £180m available to support the development of SAF plants in the UK. We will also shortly set out plans to establish a UK SAF clearing house.

In July, we launched a SAF mandate consultation, which would obligate fuel suppliers to reduce the carbon footprint of jet fuel used in the UK and create demand for SAF.

The Government is supporting R&D in Aerospace through £1.9 billion of funding (2013-2026) through the ATI Programme. In addition, Government is investing £3 million of R&D into Zero Emission Flight Infrastructure in 2021/2022 plus up to £5.5 million to support Airspace Modernisation.

Commitments to increase system efficiencies include the Airspace Modernisation Programme and

working through ICAO to ensure a global baseline for fuel efficiency.

Use **aviation tax reform** to address price imbalances between aviation and surface transport, encouraging the low-carbon alternative (e.g. rail) for journeys where one exists. Taxation should also be used, alongside improvements in broadband, to embed positive behaviours that have arisen during the pandemic (e.g. replacing business travel with online networking).

Answered in A3

Commit to not use credits from the **Carbon Offsetting and Reduction Scheme for International Aviation** (CORSIA) for flights covered by the UK ETS unless and until they can satisfy strict eligibility criteria (equivalence, additionality, permanence, sustainability).

The UK recognises the importance of international action to tackle emissions from international aviation and has been instrumental in agreeing and developing the global offsetting scheme, CORSIA. We have begun a review on how the UK Emissions Trading Scheme (ETS) could interact with CORSIA, examining how the UK can meet its national and international obligations, while taking into account the extent to which options could lead to operators having to both cancel CORSIA Emissions Units and surrender UK ETS Allowances for the same tonne of CO₂ emissions.

Following our initial consultation on CORSIA implementation in January 2021, we plan to consult on detailed proposals for any interaction between the two schemes later this year. Any changes to the UK ETS that may be required to account for CORSIA will be implemented no later than the start of Phase I(b) in 2024.

Start monitoring **non-CO₂ effects** of aviation (including through CORSIA for eligible aeroplane operators), set a minimum goal of no further warming after 2050, research mitigation options, and consider how best to tackle non-CO₂ effects alongside UK climate targets without increasing CO₂ emissions.

We are working to increase our understanding of non-CO₂ impacts and their effects on the environment, including through our Jet Zero Consultation.

Many of the measures to improve efficiencies, rollout SAF, and accelerate zero emission flight are expected to have a positive effect on reducing non-CO₂ impacts, and where there is evidence to the contrary, we will carefully consider the overall effect of policies on the climate.

ICAO now has standards in place to regulate all aircraft emissions with significant climate effects. We will continue to negotiate for these to be improved over time as well as consideration of other measures such as operational guidance and regulation of fuel composition.

Table A7

Recommendations for the Department for Levelling Up, Housing and Communities (DLUHC)

Response

Crosscutting Support **local government** to play a full role in the Net Zero transition, including through increased resourcing, guidance, involvement in local area energy plans, statutory reporting on the emissions from their estate and reforming the planning framework to enable delivery of low-carbon and climate resilient measures. This is likely to require additional funding for staffing and resources for local delivery plans, alongside a 'duty to collaborate' to encourage authorities to work with local, regional and national partners

We lead the government's significant and regular engagement with councils and local government sector bodies. As part of this engagement, we respond to the priorities of the local sector, including an open dialogue on matters such as net zero and climate change. Officials are working with sector bodies to identify the most impactful ways we can add to the support that is already provided to local authorities by other government departments. To this end, we are collaborating closely with the Local Government Association, the

to deliver their climate ambitions.

Association for Directors of Environment, Planning and Transport, the Association for Public Sector Excellence and the UK100 network of local authorities that are showing local leadership on climate change.

Ministers have a limited role in local authority workforce issues. This is because councils are independent employers, responsible for the management and organisation of their own workforces. We know many have recruited large, dedicated climate change teams, while others have secured carbon literacy training.

We will make sure that the reformed planning system supports our efforts to combat climate change and help bring greenhouse gas emissions to net zero by 2050. As part of our programme of planning reform we intend to review the National Planning Policy Framework to make sure it contributes to climate change mitigation and adaptation as fully as possible.

Working with BEIS, DWP, DfE and the Home Office, develop a strategy for a **Net Zero workforce** that ensures a just transition for workers transitioning from high-carbon to low carbon and climate-resilient jobs, integrates relevant skills into the UK's education framework and actively monitors the risks and opportunities arising from the transition. This strategy should include the development and roll-out of plans for training and skills, with buildings and manufacturing being priority areas.

Answered in A4

	<p>Develop and implement plans to make all public-sector buildings and vehicle fleets within the department's remit zero-carbon in the long term, switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032. This must be part of a coherent cross-government strategy including an updated set of Greening the Government commitments, multi-year spending commitments and annual reporting.</p>	<p>Answered in A1</p>
<p>Energy performance certificate</p>	<p>Implement improvements to the Energy Performance Certificate (EPC) and Standard Assessment Procedure (SAP) framework, including:</p> <ul style="list-style-type: none"> • Ensuring EPCs drive deployment of the necessary energy efficiency measures and do so on a holistic basis to address overheating, ventilation, and moisture-risk. • Supporting delivery objectives across both energy efficiency and low-carbon heat and valuing properly the benefits of low-carbon and flexible technologies. • Formally integrating a forward trajectory for declining grid carbon-intensity, in line with Government projections. • Addressing wider issues of quality/robustness, with a commitment to integrate in-use performance metrics from 2023. <p>Plans for the future role of Green Building Passports.</p>	<p>We welcome the CCC's acknowledgement that the EPC Action Plan proposals are a positive step towards the development of the EPC system. These actions will improve the trust in, reliability and accuracy of EPCs, encompassing points highlighted by the Committee. The response here should be read in conjunction with those from BEIS to the same questions in section A4.</p> <p>EPC recommendations signpost measures to improve the energy efficiency of buildings to users, driving their deployment. DLUHC has redesigned the certificate and the Energy Performance of Buildings register through user-centred research, making EPCs clearer and more accessible for users.</p> <p>DLUHC recognises the importance of having robust evidence about the energy efficiency of the building stock and has been publishing open access data from the register. This important resource is used by researchers, government, academics, and housing organisations, including local</p>

		<p>authorities, to understand and manage the energy efficiency of their housing portfolios.</p>
	<p>Step up efforts to deliver the waste prevention and resource efficiency improvements required as part of the pathway to Net Zero, including by:</p> <ul style="list-style-type: none"> • Setting out how levels of resource efficiency improvements in construction identified within the Industrial Decarbonisation Strategy will be delivered. • Beginning to develop and implement any additional policies needed to deliver these resource efficiency improvements, by the end of 2022. • Ensure cross-departmental working, potentially through new cross-Whitehall governance focused on resource efficiency. 	<p>Answered in A5</p>
<p>Construction</p>	<p>Develop policies (with BEIS, Defra and DfT) to drive more resource-efficient construction and use of existing low-carbon materials, including a substantial increase in the use of wood in construction. Policies should include:</p> <ul style="list-style-type: none"> • Reviewing and clarifying the position of structural timber in the ban on combustible materials, underpinned by further research and testing where necessary, and ensuring there are no barriers to the safe use of timber in buildings. Buildings safety regulator to play a role in overseeing this on an ongoing basis. 	<p>Answered in A5</p>

- The development of a fully funded policy roadmap on the use of timber, including policies to support the development of UK wood supply chains.
- Finalising the reporting methodology for whole-life carbon standards.
- Setting out a plan for phasing in mandatory whole-life reporting followed by minimum whole-life standards for all buildings, roads and infrastructure by 2025, with differentiated targets by function, scale, and public/private construction.

- Ensure that **developments and infrastructure** are compliant with Net Zero and appropriately **resilient** to climate change through proposed amendments to the Planning Bill

Answered in A7, first row.

Set out a strategy for decarbonisation of **off-road mobile machinery** and work with industry to identify potential policies to increase uptake of low-carbon off-road mobile machinery. This will require work across BEIS, DLUHC, DfT and Defra.

We will liaise, where appropriate, with BEIS, DfT and Defra on this policy which is led by DfT.

Table A8

Recommendations for the Department for Digital, Culture, Media and Sport (DCMS)

Response

Crosscutting

Support BEIS in developing a **public engagement strategy** for Net Zero which builds on the findings of the UK Climate Assembly by involving people in decision-making, providing

DCMS is already linked with the Sustainable Behaviours and Public Engagement for Net Zero team in BEIS and the department is feeding into initial work on public engagement for net zero.

	<p>trusted information on decarbonisation choices and the need to reduce emissions and adapt to climate change. The strategy should also identify preferred policy options to empower people to contribute fully towards the path to Net Zero.</p>	<p>DCMS will continue to collaborate with BEIS on this work and look for opportunities to utilise our extensive network of arms length bodies to engage the public on the net zero transition.</p>
	<p>Work in partnership with Ofgem to publish and implement a new Smart System Plan and Energy Data and Digitalisation Strategy, including on cyber-security, in order to continue to unlock the full benefits of electricity system flexibility. Ensure that, alongside smart standards for heating, all electricity users have access to half-hourly metering and the option of tariffs that encourage flexibility in use of electric heat and electric vehicle charging.</p>	<p>Answered in A4</p>
	<p>Ensure sport and culture strategies align to other departments' plans for lower-carbon buildings, more active travel and improved public health.</p>	<p>We will ensure that if/when strategies are developed or refreshed we will include these considerations in any cross-government processes.</p>
<p>Digital infrastructure</p>	<p>Ensure plans for a digital transition and fibre roll-out can complement changing work patterns and travel behaviours, leading to lower-carbon working. Co-ordinate with DfT to invest in digital infrastructure to lock in positive behaviours that reduce travel demand (e.g. homeworking).</p>	<p>With 25% of UK premises now connected via full-fibre and growing, and over 96% of homes now with superfast broadband, the sector is providing the capability to lock-in positive behaviours that can facilitate a higher-quality connection which enables the option of homeworking and, in turn, reduces travel demand due to commuting.</p> <p>Within the sector itself, companies are vastly expanding their fleet of all-electric vehicles for engineers to reduce the use and reliance on</p>

diesel & petrol combustion engines.

The sector is also experimenting and exploring the use of alternative power sources for on-site generators (including the use of hydrogen fuel cells, wind power, and hydropower).

Alongside this, operators are rolling-out water-based adiabatic cooling systems for key infrastructure sites, which removes the need for chemicals and reduces energy consumption.

Focused efforts towards the public switched telephone network (PSTN) switch-off by 2025 will also dramatically reduce the number of power-reliant infrastructure that the sector uses.

Improve information sharing on climate risks to infrastructure interdependencies at a local level, especially for **electricity, digital and ICT networks**. As reported in our previous assessment in 2019, NAP actions to enhance arrangements for information sharing between local infrastructure operators and improve understanding of critical risks arising from interdependencies have not been completed. Defra's link with Local Resilience Forums is key, and BEIS and DCMS should engage with utility companies to encourage standardised benchmarking and data sharing on climate risks to electricity networks, digital & ICT.

The telecoms sector has significantly increased its participation and representation at local-level forums and exercises.

Climate risks are no longer seen as separate and hold the same weight in risk frameworks. Planning for such risks have now been mainstreamed, with the sector working closely with local resilience forums (LRFs) and the emergency services to mitigate against climate risks alongside established risks as listed in the National Risk Register.

The sector acknowledges the limitations surrounding the sharing of sensitive data with LRFs and local emergency responders. To overcome this obstacle, it prepares ready-made impact assessments of sensitive sites which are in turn shared at the local level in the event these are affected by a risk materialising -

this has proved useful for recent sites that have been flooded.

Table A9

Recommendations for the Department for Education (DfE)

Response

Working with BEIS, DWP, DLUHC and the Home Office, develop a strategy for a **Net Zero workforce** that ensures a just transition for workers transitioning from high-carbon to low carbon and climate-resilient jobs, integrates relevant skills into the UK's education framework and actively monitors the risks and opportunities arising from the transition. This strategy should include the development and roll-out of plans for training and skills, with buildings and manufacturing being priority areas.

Answered in A4

Support BEIS in developing a **public engagement strategy** for Net Zero which builds on the findings of the UK Climate Assembly by involving people in decision-making, providing trusted information on decarbonisation choices and the need to reduce emissions and adapt to climate change. The strategy should also identify preferred policy options to empower people to contribute fully towards the path to Net Zero.

Answered in A4

Develop and implement plans to make all **public-sector buildings and vehicle fleets** within the department's remit zero-carbon in the long term, switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032. This must be part of a coherent cross-government

The department is in the process of producing a sustainability strategy for the operational estate, setting out the key commitments including how to achieve net zero by 2050 and the interim targets.

Working closely with Government Property Agency (GPA) and the Net Zero and Life Cycle Replacement programme

strategy including an updated set of Greening the Government commitments, multi-year spending commitments and annual reporting.

teams the department has secured significant funding to support the department's interventions plans as well as the capital invested by the department.

In addition, the department continues to invest heavily in its core office locations with refurbishment projects at St Paul's Place Sheffield and Sanctuary Buildings, London. These works look not only to achieve GPA design standards but also ensure any design and mechanical and engineering works consider the best sustainable solutions.

The department recognises that net zero carbon cannot be achieved through physical environment alone but also requires appropriate infrastructure, management, and behaviours.

Whilst the department does not have a vehicle fleet, commitments have been made to harness the travel reductions COVID-19 necessitated and commit to significantly reducing travel with continued use of technology and moving to hybrid working practices.

These interventions have been factored into the department's Greening Government Commitments (GGC) targets for 2020-2025.

Table A10

Recommendations for the Department for Work and Pensions (DWP)

Response

Working with BEIS, DfE, DLUHC and the Home Office, develop a strategy for a **Net Zero workforce** that ensures a just transition for workers transitioning from high-carbon to lowcarbon and climate-resilient jobs, integrates relevant skills into the UK's

DWP stands ready to support people into green jobs through work coach interventions and targeted provision including Sector-based Work Academy Programmes (SWAPs) which provide training, work experience and a guaranteed job interview, traineeships,

education framework and actively monitors the risks and opportunities arising from the transition. This strategy should include the development and roll-out of plans for training and skills, with buildings and manufacturing being priority areas.

apprenticeships and other skills provision. This will ensure jobseekers are able to develop skills to match the needs of the local labour market. As part of this, the 13-week Youth Employment Programme offers wraparound support for young claimants enabling them to access the programmes in place to help them to benefit from green jobs and create the pipeline of talent to the sector. These programmes include Apprenticeships, Skills Bootcamps, and Traineeships, SWAPs and Kickstart.

The DWP Kickstart team engages across Government departments, and with local government, to look at how the scheme can support green jobs. Work locally is undertaken by dedicated district teams with local authorities. Similarly, we maintain strong national relationships (including at ministerial level) with groups such as the Local Government Association.

DWP are working closely with the departments responsible for sectors that will be critical to the transition to net zero, such as construction, manufacturing, transport and digital. These sectors will increasingly provide exciting green job opportunities to jobseekers and DWP is proactively working to ensure that our customers will have the support they need to access them.

Design industrial decarbonisation policies to **support and create jobs**, especially in regions with reliance on industrial jobs.

Answered in A4

Develop and implement plans to make all **public-sector buildings and vehicle fleets** within the department's remit zero-carbon in the long term, switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032. This must be part of a coherent cross-government strategy including an updated set of Greening the Government

DWP Estates has developed sustainability and carbon and water management plans which set out our proposals to reduce DWP's environmental impact on its estate to meet the 2024/25 Greening Government Commitments (GGC) targets, and the longer-term net zero carbon requirement. The Carbon and Water Management Plan has been signed off and publicised internally and is now being implemented.

commitments, multi-year spending commitments and annual reporting.

As we carry out our Capital Spending Review (CSR21) bid, aspects of this plan that require funding have been included.

Funding for a feasibility study and installation of charging points across the estate for a proportion of DWP official vehicles has been allocated to priority sites in 2021/22.

Furthermore, a revision of DWP's Private User Scheme (PUS) policies has been ongoing in an attempt to meet the 2022 targets. The policy changes meant that it was mandatory for users to replace vehicles with ULEV compliant vehicles from April 2021.

DWP Estates' design standards ensure sustainability standards are maintained within our projects and sustainable alternatives are considered. These have been recently revised to align with GGC targets and net zero carbon requirements, and we will continue to develop them further.

A new pan-DWP Sustainability Governance Forum has been agreed at capacity board, with the first meeting scheduled in August. The Forum will ensure that net zero is being delivered in areas that are not in the direct control of DWP Estates, but have a significant impact on successful delivery.

Public Sector Decarbonisation Scheme grant funding of £5.4 million has been awarded to DWP Estates to implement a heat decarbonisation/energy efficiency project across 20 sites. In total, these interventions are forecast to save 2,164 tonnes of CO₂ per annum. The project also includes heat decarbonisation at one of our largest sites by utilising the local district heating network. We hope to attract further grant funding where available to build upon this.

Table A11

Recommendations for the Department of Health and Social Care (DHSC)

Response

Develop and implement plans to make all **public-sector buildings and vehicle fleets** within the department's remit zero-carbon in the long term, switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032. This must be part of a coherent cross-government strategy including an updated set of Greening the Government commitments, multi-year spending commitments and annual reporting.

DHSC is fully engaged with the Greening Government Commitments and is committed to achieving net zero by 2050. At end 2019/20 DHSC had achieved a 64% reduction in greenhouse gas emissions against a 2009/10 baseline. DHSC also reports under the Government Fleet Commitment, which aims to achieve a 100% zero emission at the tailpipe car and van fleet by end 2027. At end 2020 DHSC and its arms length bodies had already achieved 51% ULEV/zero emission fleet.

We also continue to support the NHS in delivering its Net Zero Plan, which includes a commitment to achieve net zero for all NHS buildings and fleet by 2040 (see separate recommendation).

Support the **NHS** in delivering on its Net Zero plan.

DHSC is fully supportive of the NHS England's Net Zero Plan, including its ambitious targets to achieve net zero for its carbon footprint plus by 2045, and for direct emissions by 2040.

There is a broad range of action ongoing in this space. Most recently, to support efforts across the NHS the 2021/22 NHS Standard Contract set out the requirement for Trusts to develop a Green Plan to detail their approaches to reducing their emissions in line with the NHS's national trajectories. Later this Autumn NHSE also intends to publish the world's first Net Zero Health Building Standard.

DHSC recognises that driving down direct NHS emissions will require targeted investment. As of April 2021, 32 Trusts had benefitted from over £260 million from BEIS's Public Sector Decarbonisation Scheme. We are working closely with NHS England to look

at future capital demands of their net zero work.

Take an active role in climate policy development that also has **health benefits**, such as active travel, access to green space, air quality, better buildings and healthier diets.

DHSC continues to work across government to ensure its climate policies lead to health benefits. In particular:

- DHSC is part of a £5.77 million cross-governmental project to test how to increase use /connection to green social prescribing services in England.
- Public Health England (PHE) is contributing to multiple health focused work e.g. cycling and walking plan (DfT), *Fuel poverty strategy* (BEIS)^{lv}, and access to green space and active travel (Sport England).
- PHE worked with the Carbon Trust to conduct a sustainability assessment in developing the *Eatwell Guide*.^{lvi} PHE continues to work to support government policy and to expand work programmes to address dietary health.

We are ensuring that air quality gets priority for better health. Recent examples include working with BEIS to include the health benefits of cleaner air in their energy transition and zero emission vehicles campaign. PHE has developed a five-year cleaner air programme of work (continuing via the UK Health Security Agency).

Table A12

Recommendations for the Home Office

Response

Home Office, BEIS, DWP, DfE and DLUHC, should develop a strategy for a **Net Zero workforce** that ensures a just transition for workers transitioning from high-carbon to low carbon and climate-resilient jobs, integrates relevant skills into the UK's education framework and

Answered in A4

actively monitors the risks and opportunities arising from the transition. This strategy should include the development and roll-out of plans for training and skills, with buildings and manufacturing being priority areas.

Develop and implement plans to make all **public-sector buildings and vehicle fleets** within the department’s remit zero-carbon in the long term, switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032. This must be part of a coherent cross-government strategy including an updated set of Greening the Government commitments, multi-year spending commitments and annual reporting.

The Home Office’s over-arching strategy is to operate a lower carbon, more resource-efficient estate thereby helping to meet its environmental obligations whilst also significantly reducing operating costs. The Home Office is planning to commission a net zero study this year to identify various opportunities for low and zero carbon technologies to meet its 2032 non-traded emissions target and long-term net zero target.

The Home Office has commissioned a feasibility study to identify the potential for Electric Vehicle Charge Points (EVCP) across the Home Office estate to help transition its fleet to ultra-low emissions vehicles (ULEV) including pure electric vehicles where viable options are available. The HO is developing a prioritisation process to ensure that priority is given to operational buildings and that adequate funding is secured as part of the spending review.

Table A13

Recommendations for the Ministry of Justice (MoJ)

Response

Home Office, BEIS, DWP, DfE and DLUHC, should develop a strategy for a **Net Zero workforce** that ensures a just transition for workers transitioning from high-carbon to lowcarbon and climate-resilient jobs, integrates relevant skills into the UK’s education framework and actively monitors the risks and opportunities arising from the transition. This strategy should include the

Answered in A4

development and roll-out of plans for training and skills, with buildings and manufacturing being priority areas.

Develop and implement plans to make all **public-sector buildings and vehicle fleets** within the department's remit zero-carbon in the long term, switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032. This must be part of a coherent cross-government strategy including an updated set of Greening the Government commitments, multi-year spending commitments and annual reporting.

MoJ has developed a Net Zero Carbon Strategy to support transition to net zero operational emissions from heat, power and vehicles by 2050 or sooner. In 2021/22, it is developing a detailed implementation plan to meet the interim vehicle and building targets. MoJ's next four prisons are aiming cut emissions by at least 85% compared to prisons already under construction. Work is also progressing on the existing estate to install solar panels, electric vehicle chargers, LED lighting and heat pumps.

Table A14

Recommendations for the Ministry of Defence (MoD)

Response

Develop and implement plans to make all **public-sector buildings and vehicle fleets** within the department's remit zero-carbon in the long term, switching to ultra-low emission vehicles by 2030 and halving emissions from public buildings by 2032. This must be part of a coherent cross-government strategy including an updated set of Greening the Government commitments, multi-year spending commitments and annual reporting.

Defence has a programme in place to switch our White Fleet to electric vehicles by 2027. The approach to reducing carbon use in defence buildings is set out in the near term actions within our Climate Change and Sustainability Strategic Approach Sustainability and Climate Change: MOD - GOV.UK (www.gov.uk).

As a key central government contributor to net zero, MOD has a target to reduce emissions from defence infrastructure by 30% by 2025 from a 2017/18 baseline.

Defence takes a proactive role across government and the department's performance against the Greening Government Commitments is reported in the Annual Report and Accounts and good practice examples of sustainability

initiative can be found at [Sanctuary magazine - GOV.UK \(www.gov.uk\)](https://www.gov.uk/sanctuary-magazine).

Assess the potential for **alternative fuels** (such as low-carbon electricity, hydrogen or bioenergy) to be used for land vehicles, ships and aircraft, and consider opportunities to support wider use of low-carbon technologies in civil applications (e.g. through research or demonstration).

Sustainability must sit alongside achieving our primary defence purpose, but the UK will be stronger with a climate-prepared defence.

Opportunities are being taken to generate and enhance capability and resilience and deliver sustainable options for our fuels, equipment, supply, and operational support. Innovative solutions, value for sustainability in procurement and pilot projects are already underway in partnership with academia and industry.

Table A15

Recommendations for the Office of Gas and Electricity Markets (Ofgem)	Response
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<p>Continue to support widespread deployment of EV charging infrastructure:</p> <ul style="list-style-type: none"> • This should ensure it can support high EV uptake levels. Project Rapid has the right ambition for the strategic road network and should be developed into a full strategy for the 2020s and beyond. • Further investment is needed to support on-street and other urban charging solutions for those without off-street parking and destination charging. • Around 150,000 public charge points will need to be operating by 2025. These should be widely available across all regions of the UK. • Implement the recommendations of the EV Energy Taskforce, in particular improving the 	<p>Answered in A6</p>
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consumer charging experience and making smart-charging accessible, appealing and cost effective for as many EV users as possible.

Ensure all regulatory decisions, and procurement decisions, are consistent with the **Net Zero goal** and reflect the latest understanding of **climate risks**.

Ofgem recognises the pivotal role it plays in delivering net zero at lowest cost to consumers and ensuring that the cost and benefits of a low carbon energy system are shared fairly. Through our strategic work programmes, as well as our previously published *Decarbonisation Action Plan*,^{lvii} we are working to ensure net zero is a part of all our work.

We also ensure our tender documents and specifications reflect net zero goals and include relevant questions where applicable.

Develop mechanisms for strategic investment in coordination with BEIS to ensure that **electricity networks** can accommodate increased future demand levels, including large localised demand increases associated with electrification in manufacturing, transport and buildings, and that lack of network capacity does not cause delays in emissions reduction.

Ofgem will deliver its recommendations for changes to onshore electricity transmission network planning, including roles and responsibilities for centralised planning, by late 2021.

Our determination for the RIIO-ED2 price control (2023-28), due in 2022, will ensure that distribution network operators can invest to accommodate increased electricity demand due to increased electrification.

Start a programme of research with BEIS to identify **areas which are unlikely to be suitable for hydrogen** (such that electrification and alternatives can be prioritised), **alongside priority candidate areas for hydrogen**. Distribution Network Operators should gather and share detailed information on network capacity (at least to substation level) to feed into this.

Ofgem are working with BEIS to identify the suitability of areas of the country for hydrogen, including a review of the whole system implications of choices and work with gas distribution operators to build a granular picture of hydrogen readiness by location.

Through the RIIO-ED2 price control, Ofgem will ensure that distribution network operators can implement their data and digitalisation strategies, including the capture and provision of the network information necessary to meet the requirements of a range of different stakeholders.

Set out reforms to encourage the **utilisation of existing network capacity** and ensure that costs of local network upgrades are shared fairly and do not disincentivise the roll-out of low carbon technologies.

Ofgem will ensure that all distribution networks deliver and adopt a standardised approach to procuring flexibility and managing connections by 2023. We will announce our decision on proposals to improve distribution connection charging and the definition and choice of access in by end of Q1 2022 to incentivise better use of networks.

Ofgem will consult in 2021 on the timescales for future distribution charging reform.

We are also working with various stakeholders through our Full Chain Flexibility Forum to consider what further work may be required to enable optimal utilisation of network capacity.

Work in partnership with BEIS to publish and implement a new **Smart System Plan** and **Energy Data and Digitalisation Strategy**, including working with DCMS on cyber-security, in order to continue to unlock the full benefits of electricity system flexibility. Ensure that, alongside smart standards for heating, all electricity users have access to half-hourly metering and the option of tariffs that encourage flexibility in use of electric heat and electric vehicle charging.

Ofgem and BEIS jointly published the *Smart Systems and Flexibility Plan* and the *Energy Data and Digitalisation Strategy* in July 2021, and we are now working to implement the accompanying action plan.

We expect the industry to implement market-wide half-hourly settlement by October 2025, and we have established strong incentives and governance to ensure this is met.

We are also considering what further work may be required as part of our Future of Retail Strategic Change Programme.

Develop (with BEIS) a strategy to coordinate the development of **interconnectors**, connections for offshore wind farms and the enhancement of inter-area transfer capacity for the onshore network, ensuring cost-effective, timely delivery, bringing forward any legislation necessary to enable it.

Through the Offshore Transmission Network Review (OTNR), Ofgem is working with BEIS to ensure that transmission connections for offshore wind generation are delivered in the most appropriate way and to consider the coordination of multi-purpose interconnectors with offshore wind projects.

Ofgem will also publish a final decision on changes to the regulatory framework for new interconnectors in the autumn.

Work with BEIS to make explicit how current and future policies will reduce emissions associated with **methane leakage** from the gas networks in a way that is consistent with the Sixth Carbon Budget.

Ofgem has provided BEIS with details of how the HSE’s Iron Mains Risk Reduction Programme is the principal driver of reductions in methane leakage from the gas distribution network, which will run until 2032.

Ofgem will require the gas networks from 2022 onwards to publish data on how the reductions achieved match up to these projections, as part of their Annual Environmental Report.

Table A16

Recommendations for the Water Services Regulation Authority (Ofwat)

Response

Ensure all regulatory decisions, and procurement decisions, are consistent with the **Net Zero goal** and reflect the latest understanding of **climate risks**.

As part of our ongoing work we are exploring how we can ensure that all regulatory and procurement decisions are consistent with the net zero goal. We are currently consulting on Ofwat's approach to the next price review. We are considering how best to reflect the transition to net zero in our regulatory approach for the next five year price control period (2025-30). Potential options we are considering include:

- asking companies to identify the carbon reduction benefits resulting from base expenditure and existing enhancement programmes as part of their business plan; and
- using the outcomes framework to compensate companies if they go beyond the carbon reduction that can be delivered through base costs and existing programmes; and/or
- allowing additional or incremental carbon reduction costs where proposals are well evidenced and demonstrate benefits over and above purely carbon benefits alone, and, where feasible, benchmarking incremental unit

costs of carbon reduction to provide an efficient additional cost allowance for carbon reduction.

As part of our joint work with others such as the Environment Agency, we are strengthening or integrating GHG considerations into some of the major investment decision-making processes, which feed into our price review. This includes Water Resource Management Plans (WRMP), the Water Industry National Environment Programme (WINEP) and the Regulators' Alliance for Progressing Infrastructure Development (RAPID). As part of a joint government and regulator review of the WINEP, we are recommending that net zero is a primary outcome that water companies should seek to deliver when developing and assessing options for the WINEP.

We explicitly included net zero as a theme for our innovation fund, and as part of the first round, we have approved net zero-related projects focused on hydrogen generation, carbon storage, and how to deliver low whole-life carbon and cost solutions. We are also supporting several net zero-related green recovery proposals focused on reducing emissions, as has been discussed with the Ofwat Board.

Robust open and transparent reporting of greenhouse gas (GHG) emissions by the industry is essential to allow us to effectively scrutinise and challenge companies plans to decarbonise. To this effect, we are currently phasing in a mandatory standardised reporting process for both operational and embedded GHG emissions. This will improve our understanding of industry performance and progress and will enable us to develop the appropriate incentives for the 2024 price review (PR24).

Ofwat as a department is committed to a net zero carbon footprint in line with

government net zero targets to gain a 78% reduction by 2035 and net zero by 2050. We are working with the support of Defra to assess the actions Ofwat can take to achieve this. This will cover our key office locations and our hybrid home working model.

Ofwat ensures that procurement decisions are consistent with the net zero goal through application of social value in the award of central government contracts and the use of the Social Value Model in procurements. The background to this is available [here](#).

In relation to understanding the climate risks facing the water industry, we are currently finalising our adaptation report for Defra. This report will make clear the climate risks facing the sector, and what we have done and are doing to enable the sector to respond to these risks. The report will also give due consideration to the potential opportunities stemming from responding to climate risks, and the future actions we as the regulator need to consider, so that the industry can effectively respond to the risks from climate change.

Include **decarbonisation** as one of Ofwat's core principles, to assist the water industry's goal of decarbonising by 2030, and the need to roll out advanced anaerobic digestion systems.

Ofwat's strategy, *Time to act, together*^{lviii} makes clear that the challenges of climate change and the need to achieve net zero are a key focus of its regulatory approach. The strategy highlights that we want to strengthen the sector's approach to climate change mitigation and adaptation. We are also part of the UK Regulator Network (UKRN) climate change working group focused on understanding cross-sector approaches to net zero, as well as Water UK's panel on net zero.

To date we have been broadly supportive of the industry's work on net zero including the *Net Zero 2030 Routemap*.^{lix} We view the Routemap as a step toward the ultimate goal of embedded and operational net zero by 2050 and will work with the industry to achieve this goal

while challenging them to achieve net zero efficiently, keeping water as affordable as possible. We are supportive of the water industry increasingly adopting advanced anaerobic digestion systems where they represent the most cost effective and feasible solution to reducing GHG emissions.

Work with Defra, the Environment Agency and other stakeholders to set out targets and supporting measures for **reducing water use by business**. This could be through ensuring that any water reduction targets linked to the Environment Bill include business as well as household water use as well as responding to advice and recommendations from Defra’s new Senior Water Demand Reduction Group.

Ofwat is working with industry, Defra, and the Environment Agency as well as other stakeholders such as the market operator MOSL and the Consumer Council for Water (CCW) to help enable industry deliver its action plan for improved water efficiency in the non-household sector. This includes working with industry via the Water Efficiency Steering Group (WESG) and Defra to understand and integrate the contribution the non-household sector can make to national water reduction targets, as anticipated under the Environment Bill.

Ofwat also sits on the Senior Water Demand Reduction Group (SWDRG) with a view to understanding and promoting, from a regulatory perspective, water efficiency including for the non-household sector.

Table A17

Recommendations for the Office for National Statistics (ONS)

Response

Review plan for improving **data collection** and statistical reporting for the purposes of monitoring and informing the low-carbon transition, as part of the broader work the ONS are already undertaking to improve the collection of climate-related data.

ONS is convening a cross-government project to improve coherence and accessibility of climate change-related statistics. This has agreed a supporting statistical framework with six pillars – including emissions, mitigation and adaptation – and four cross-cutting themes – including geographic variation and distributional effects.

An initial climate change statistics portal, with dataset search and dashboard, will be available in time for COP26 in

November, powered by the Integrated Data Service.

Several government departments and bodies have responsibility for aspects of climate change-related data collection, the Met Office, BEIS and DEFRA among others. ONS is playing an important role, working with stakeholders from across government, bilaterally, through the project above and other channels, on data collection. This includes using the ONS-led Low Carbon and Renewable Energy Economy and Environmental Protection Expenditure surveys, looking across several waves of net zero actions data from the Business Insights and Conditions Survey and exploring other sources.

Work with BEIS to put in place plans to collect and report data annually on **low-carbon heat networks**, specifically, the amount of heat delivered (split by DUKES consumption sector, i.e. Residential/Public/Commercial/Industry, and where possible, by source of heat supply).

We recognise the importance of this area in achieving net zero by 2050, and work closely with BEIS, the lead department for energy statistics and also for heat and low carbon heat networks. With the publication of the *Heat and Buildings Strategy*, ONS and BEIS will work together to explore approaches to obtaining data on low carbon heat networks.

Improve the collection and reporting of **industrial decarbonisation data** to allow for progress to be monitored more effectively, particularly on energy and resource efficiency.

We are clear that data will play a vital role in supporting and monitoring industrial decarbonisation towards net zero 2050 and the interim milestones. ONS already publishes energy and emissions data by industry as part of the Environmental Accounts.^{ix}

We have worked with BEIS to publish territorial emissions by industry and will continue to support them with improvements to this dataset.

While it does not provide emissions data, several waves of the Business Insights and Conditions Survey include questions for companies on their actions towards net zero have already and/or are planning to take in the year ahead.

We will continue to work with Defra on materials and resource efficiency, and to explore possibility for publishing greater granularity on materials use.

The cross-government climate change platform (see above), powered by the Integrated Data Service, will support effective monitoring of progress by bringing data together.

Table A18

Recommendations for the Scottish Government	Response
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Scale up delivery across all sectors in line with the ambition set out in the recent **Climate Change Plan Update**.

The Scottish Government is now focused on delivering the updated *Climate Change Plan*^{xi} which includes nearly 150 new and boosted policies to accelerate progress, supported by a record £1.9 billion of capital funding in the Scottish Budget 2021/22 to tackle climate change. The Scottish Government reports annually to the Scottish Parliament on progress towards the delivery of climate change plans, and through a process of monitoring, evaluating, updating and adapting the latest plan, the Scottish Government will track Scotland's path to meeting its ambitious targets.

Publish the finalised **Heat in Buildings strategy**.

- This must include finalising the regulatory framework and role of different trigger points (including area-based plans), and setting in train the legislation needed to underpin these.
- Consult on the trajectory of reform for metrics such as EPCs, to ensure they are robust and enforceable, fit for purpose to deliver the measures needed on a holistic basis, do not disincentivise low-carbon heat, integrate in-use performance metrics from 2023, and include

The finalised *Heat in Buildings Strategy* will be published as soon as possible. It will set out the Scottish Government's approach to regulation including: increasing the clarity and pace of the Scottish Government's approach, phasing out the need to install fossil fuel boilers, and introducing primary legislation, subject to consultation and limits on devolved competence, that provides the regulatory framework for zero emissions heating and energy efficiency. New regulations could require building owners to comply at one of a range of potential trigger points to install a zero-emissions heating system (e.g. the sale or lease of a building, or the replacement of an existing heating system), with an ultimate backstop date in 2045.

plans for the future role of Green Building Passports.

- Provide further detail on the ambition for heat networks and heat pumps over the coming decade, and determine how funding for energy efficiency and low-carbon heat will be allocated to meet strategic priorities.

A consultation on reforming the domestic EPC metric was published on 26 July 2021 as part of ongoing work to ensure metrics are fit for heat decarbonisation. Research on the use of green building passports has commenced.

The final Strategy will provide an updated position on the Scottish Government's capital allocation and strategic priorities, including its commitment to invest at least £1.8 billion over the current session of the Scottish Parliament. In addition, a Heat Networks Delivery Plan will be published by 1st April 2022.

Proposals in Scotland's Updated Climate Change Plan 2018-32 to set out a **route map for agricultural transformation** should be scaled up, with the development of environmental conditionality that incentivises emission reduction and carbon sequestration measures in the land sector that build towards Scotland's climate goals. It is essential that appropriate incentives are in place to drive early action, given the time (often decadal) needed for some measures to reduce and sequester carbon (e.g. afforestation and peat restoration).

The Scottish Government's updated *Climate Change Plan* set out a high-level route map to transform Scottish agriculture to enable farming to continue sustainably into the future – producing high quality food for the nation, helping to reduce carbon emissions, delivering wider environmental benefits and improved biodiversity, and ensuring we use appropriate land to allow us to meet our climate change targets. That route map includes a commitment to introducing environmental conditionality in 2021 to extend requirements to all farmers and crofters to undertake environmental actions.

The Scottish Government established five farmer-led groups, as a key initiative to bring together the people who have knowledge and expertise to propose practical workable solutions to ensure that agriculture contributes to Scotland's climate change goals. Their reports were published in March 2021. The Scottish Government has recently established an Agriculture Reform Implementation Oversight Board (ARIOB) for development of new proposals for sustainable farming support comprising a broad range of representatives from farming and environmental sectors.

Renew efforts to improve **recycling and resource efficiency**, including by:

Bringing forward the planned circular economy package for legislating within the forthcoming Programme for Government.

Putting in place the policy and support to ensure the 2025 targets (including the 70% recycling target) within the package are delivered, and setting new ambitious targets for 2030.

Legislating to ban key biodegradable waste streams going to landfill from 2025, and ensuring this is delivered through increased resource efficiency and recycling.

The Scottish Government has committed to bringing forward a *Circular Economy Bill* in the current session of the Scottish Parliament (i.e. the period to 2026).

The Scottish Government is: developing a route map to meet Scotland's 2025 waste and recycling targets, which will also look beyond 2025 to identify how the waste and resources sector will contribute towards Scotland's journey towards net zero in the period to 2030 and beyond; establishing a £70 million fund to improve local authority recycling collection infrastructure; ensuring separate collection of textiles by 2025; and ensuring that bio-waste (e.g. garden waste) is either separated and recycled at source, or is collected separately and is not mixed with other types of waste by 2023.

An implementation date of 31 December 2025 for the biodegradable municipal waste landfill ban has now been set out in legislation. However, significant progress is expected ahead of that date. There is also an intention to consult on extending the ban to include biodegradable non-municipal wastes.

Publish a strategy setting out how the Scottish Government will achieve a 20% reduction in **car-kilometres** by 2030 and deliver 20-minute neighbourhoods. This should be supported by:

Continuing to strengthen schemes to support walking, cycling, and public transport.

Investment in infrastructure connectivity to lock in positive behavioural changes that reduce travel demand (e.g. home-working). Supporting the public transport and shared mobility sectors to recover from the COVID-19 pandemic, including through recovery funding and positive communication and messaging.

A route map that details Scottish Government plans to meet the 20% reduction in car kilometres by 2030 is intended to be published this year. 20 Minute Neighbourhoods is a key plank of the National Planning Framework 4 which is due to be laid in the Scottish Parliament in Autumn 2021.

Other examples of Scottish Government support around active and public travel, and changes to travel demand as we recover from the pandemic include:

- The Programme for Government 2020 committed over £500 million of long-term investment in active travel (i.e. over 5 years), recognising the need to assure funding for major active travel infrastructure projects which take up to 5 years to deliver.

- The commitment to establishing pilots for free bikes for schoolchildren who cannot afford one. We have identified £2.5 million to support these initial pilot programmes which will run for 12 months and benefit up to 3000 children.
- There is also £500 million to improve bus priority infrastructure.
- Through the Reaching 100 programme, the commitment to delivering superfast broadband (>30MB/sec) for everyone who wants it by the end of 2021.

Continue to support the expansion of Scotland's **public EV charge point network**, to ensure the EV transition works for all road users in Scotland.

The Scottish Government has invested over £45 million in developing the Charge Place Scotland network - which has grown to over 1,800 public charge points in Scotland - and is continuing to work with local authorities this year to develop and expand the network through the Local Authority Installation Programme.

The Scottish Government is also committed to developing new financing and delivery models for electric vehicle charging infrastructure in Scotland. In July 2021, Transport Scotland and the Scottish Futures Trust published a report on the future of public electric vehicle charging infrastructure in Scotland^{lxii}. This sets out how Scotland can grow and expand the provision of charge points including opportunities to consider new models of delivery through partnership working with the private sector.

Maintain the provision of **interest-free loans** for EVs (now including second-hand EVs) on top of existing UK government grants. Plan for a transition to fiscally-neutral incentives as EV costs fall.

The Scottish Government's Low Carbon Transport Loan continues to transform demand for electric vehicles across Scotland and has already provided over £100 million of funding to support the switch to low carbon vehicles. A new focus on used vehicles will help households, who may otherwise be put off by the higher purchase price of ULEVs, benefit from the cheaper running costs. The Scottish Government will continue to review the incentives as the market develops, to

ensure that they do not distort the market and that no parts of society are left behind as part of the electric vehicle transition, in line with our commitment to securing a just transition to net zero.

Taxation should be used, alongside improvements in broadband, to **embed positive behaviours** that have arisen during the pandemic, replacing business travel with videoconferencing and online collaboration.

The vast majority of taxes related to energy and resources, including fossil fuels, are reserved to the UK government.

The Scottish Government has committed to delivering superfast broadband for anyone who wants it by the end of 2021, while Transport Scotland has commissioned new research to build the evidence base on employers' attitudes towards working from home and their intended approach to employee travel as we exit from lockdown. This has helped inform thinking on how to support employers to encourage sustained home working as businesses recover from the pandemic. Transport Scotland has also commissioned research to look at 20-minute neighbourhoods in a Scottish context, and on the potential emissions impacts of increased home working, both of which will be used to inform policy making as we recover from the pandemic.

Seek to address price imbalances between aviation and surface transport, once **aviation taxation** is devolved to Scotland, encouraging the low-carbon alternative (e.g. rail) for journeys where one exists.

The Scottish Government is focusing on working with the aviation industry to reduce the environmental impact of air travel, including decarbonising scheduled passenger services within Scotland by 2040.

The Scottish Government is also working with the rail industry to reduce journey times and is engaging with the UK government on its consultation on Air Passenger Duty reform to find a solution for aviation that remains consistent with Scotland's climate ambitions. The Scottish Government remains fully committed to introducing Air Departure Tax (ADT) when a solution to the Highlands and Islands exemption issue has been found. However, it is important to note that Scotland's location means that air travel plays an important role in providing connectivity. For example, Inverness to

London city centre using a plane as the main mode of transport takes just under four hours^{lxiii} compared to eight and a half hours by train and almost 16 hours by coach.

Play a leading role in decarbonising the **shipping** sector by exploring opportunities to transition ferries operated by Transport Scotland to low-carbon energy and establishing appropriate business models to encourage their adoption.

The Scottish Government's updated *Climate Change Plan* commits to ensuring that by 2032, 30% of Scottish Government owned ferries will be low emission, and low emission solutions will be widely adopted at Scottish ports. Additionally, Scotland has committed to continue to examine the scope for utilising hybrid and low carbon energy sources in the public sector marine fleet as part of the vessel replacement programme.

Table A19

Recommendations for the Welsh Government

Response

Publish a coherent, **long-term strategy for heat and energy** efficiency in Welsh homes and other buildings, setting a framework for progress in areas of devolved responsibility. As part of this, energy efficiency policy should be designed so as to ensure that funds go as far as possible in reducing the fuel poverty gap and improving the energy efficiency of homes, by focusing on the most cost-effective interventions (including upgrading homes to EPC B and EPC C where applicable).

We are supporting the development of four Regional Energy Strategies, which identify the opportunities for delivering economic and social benefits from a low carbon energy system. The strategies will provide the evidence base for heat and energy efficiency as part of a low carbon energy system. We will build on this evidence to establish the clear strategic direction for decarbonising heat.

Our new plan for tackling fuel poverty contains four policy goals within devolved competence that will reduce fuel poverty by 2035.^{lxiv}The decarbonisation goal commits us to improving the thermal and energy efficiency of lower income homes in the owner-occupier and private rented sector, thereby reducing energy bills and greenhouse gas emissions.

Deliver on the priorities set out in Llbwyr Newydd to **reduce demand for higher-carbon travel**. This includes:

- Delivering a better, more integrated, decarbonised bus system.
- Developing a network of connected local routes for walking and cycling.
- Investing in infrastructure connectivity to enable delivery of the ambition for 30% of the workforce to work remotely on a regular basis.
- Supporting the public transport and shared mobility sectors to recover from the COVID-19 pandemic, including through recovery funding and positive communication and messaging.

Llwybr Newydd establishes a 20-year vision for an accessible, sustainable and efficient transport system based on three priorities:^{lxv}

- bring services to people in order to reduce the need to travel;
- allow people and goods to move easily from door to door by accessible, sustainable and efficient transport services and infrastructure; and
- encourage people to make the change to more sustainable transport.

It embeds the principle of a sustainable transport hierarchy, which will guide decisions about new infrastructure and gives priority to walking and cycling and public transport.

Our second decarbonisation plan will set out more specific detail on how we will deliver against these priorities.

Support delivery of a **charging network** that meets the ambition set out in the Electric Vehicle Charging Strategy, to ensure the EV transition works for all road users in Wales.

We will shortly publish our electric vehicle charging action plan which will include further details on the specific support for the roll out of a comprehensive network.

The Welsh Government's second statutory decarbonisation plan (LCDP2), due out later this year, should set out policies to **accelerate afforestation rates** to deliver its share of the UK target to plant 30,000 hectares in 2025.

We have accepted the CCC's proposal to plant 43,000 hectares of trees by 2030. Our second decarbonisation plan will outline how we intend to reach this goal, drawing on the recommendations of the Trees and Timber Taskforce.^{lxvi}

Build on strong progress made on **recycling and resource efficiency**, including by:

- Implementing the policies set out in the recent 'Beyond Recycling' strategy.
- Legislating and progressing towards the existing 70% recycling target, and set new ambitious targets for 2030.
- Legislating to ban key biodegradable waste streams going to landfill from

We are taking forward a new extended producer responsibility scheme for packaging, a deposit return scheme for drinks containers, and legislation to increase the recycling of wastes produced in non-domestic premises.

We have set a goal of zero waste (100% recycling) by 2050 and plan to increase recycling targets for 2030 and beyond on a trajectory towards this goal.

2025, and ensuring this is delivered through increased resource efficiency and recycling.

There is already a ban in place on the landfilling of separately collected paper. We intend to extend this landfill ban to include the coverage of separately collected cardboard, food, textile and wood waste. We intend to introduce legislation to require all non-domestic premises to separate at source for recycling a number of key wastes streams, including the following that are biodegradable: paper/cardboard, food, and textile waste. We have a target of zero landfill by 2025. We will continue to monitor what is being landfilled, and will introduce further interventions if necessary in order to meet this target.

Table A20

Recommendations for the Northern Ireland Executive

Response

Publish a final energy strategy that sets out how Northern Ireland will achieve a **net zero carbon energy system** by 2050, in line with the pathways recommended in our December 2020 advice.

A detailed consultation on policy options for a new Energy Strategy was published in March 2021 and is now closed. Subject to Northern Ireland (NI) Executive approval, and incorporating the responses to the consultation, a new energy strategy will be published later in 2021.

The focus will be on key outcomes, targets, milestones and decisions to 2030. This will be supported by illustrative scenarios to show the impact of proposed policies to 2030 and potential different trajectories beyond this to 2050.

Publish a coherent, **long-term strategy for heat and energy efficiency** in Northern Ireland's homes and other buildings; encompassing regulatory, policy and funding commitments to facilitate delivery.

- The strategy should include a trajectory of regulatory standards for

The new Energy Strategy, subject to NI Executive approval, will outline initial proposals for phasing out fossil fuel heating, focusing on more carbon intensive methods. This includes the phasing out of certain solid fuels such as coal and reducing NI's dependency on fossil fuel heating oil. Support for low

energy efficiency, supported by reforms to relevant metrics (such as EPCs) to ensure they drive the measures needed on a holistic basis and do not disincentivise low-carbon heat. Reforms should ensure metrics are robust and enforceable such that standards targeted are achieved in practice.

- Publish proposals on the phase-out of fossil fuel heating, including standards to phase out the installation of new liquid and solid fossil fuel heating. Proposals should recognise the critical role of heat pumps and hybrid heat pumps in these homes, minimising the use of biofuels to reflect economy-wide needs.

carbon heating options, including electrification of heat, will also be outlined. Further detailed information on heat policy, such as biofuels and hydrogen, will be provided in a consultation on decarbonising heat in early 2023.

A new 'energy savings target' will act as a strategic driver for, and aggregate measure of, energy savings achieved by policies and schemes that impact on energy use.

'Minimum Energy Efficiency Standards' for different building types in NI will be explored, with consideration given to appropriate metrics and enforcement policies.

Vulnerable households must be considered appropriately with inequalities, including fuel poverty, being addressed and no further additional inequalities created.

Consult on an ambitious trajectory of **new-build standards** uplifts, including ensuring all new homes are designed for a changing climate, are ultra-efficient and use low-carbon heating from 2025.

A provisional phased programme has been published in the *Energy Strategy Options Consultation*.^{lxvii} The aims of the programme are to uplift NI's building regulations, taking England's Future Homes and Future Buildings proposals into account, and to provide ultra-high energy efficient building fabric and services with low carbon heating standards for new buildings, as soon as is practicable (no later than 2026/27). Consideration may be given to earlier uptake of requirements for low carbon heating solutions from 2022/23, if deemed feasible following consultation with industry.

Set out provisions to integrate a **post-CAP framework** that helps the land sector contribute to Northern Ireland's climate goals as soon as the climate legislation is introduced. This should include providing incentives for landowners and tenants to deliver low-carbon farming practices and change

A new Agricultural Policy Framework for NI is under development with a public consultation on the policy proposals planned for Autumn 2021. Carbon reduction is an underpinning element, that is being taken forward initially as a cross cutting theme, seeking to ensure that as many of the policy interventions as possible help drive down the carbon

the use of land to reduce emissions and increase carbon sequestration.

footprint of the agricultural industry, but this will evolve into a primary policy workstream in its own right as baselines and reduction targets are established.

The proposed Soil Nutrient Health Scheme (SNHS) will provide landowners with a baseline assessment of the carbon stocks in their soils.

Soil testing and LiDAR also provide a strategic platform that will be used to support productivity and environmental objectives, including carbon reduction.

Currently, the Environmental Farming Scheme (EFS) and the Small Woodland Grant Schemes provide incentives to landowners for land use change to reduce carbon emissions and sequester carbon.

The Northern Ireland Executive should bring forward a **resource efficiency package** which matches the ambition of Wales and Scotland, including by:

- Setting a target for 70% recycling across all wastes by 2030.
- Policies to deliver such a target, as well as improving waste prevention and re-use.
- Legislating to ban key biodegradable waste streams going to landfill from 2025, and ensuring this is delivered through increased resource efficiency and recycling.

A Circular Economy Strategic Framework (CESF) will be published for public consultation in Summer 2022 (subject to NI Executive approval). It will inform upcoming economic, environmental, and social policy development, raise awareness across all sectors and can be used to set specific targets and actions to increase circularity across NI.

Responses from a recent discussion document on the future of recycling in NI are currently being analysed and will be used to develop future waste policies and determine future recycling targets. Further public consultations will be carried out on new waste legislation and policies that will deliver improved waste prevention, re-use, recycling and which address biodegradable waste going to landfill.

Modelling, completed by the Waste and Resources Action Programme, showed NI can achieve and surpass a municipal recycling rate of 65% ahead of the target date of 2035, with the non-

household municipal sectors being the most influential in reaching this.

Strengthen support for and provision of schemes to support **walking, cycling and public transport** to reduce Northern Ireland's high levels of car-dependence:

- Strengthen schemes to ensure access to local amenities without dependency on cars.
- Invest in infrastructure connectivity to lock in positive behavioural changes that reduce travel demand, e.g. home-working.
- Support the public transport and shared mobility sectors to recover from the COVID-19 pandemic, including through recovery funding and positive communication and messaging.

In 2020/21 the Department for Infrastructure committed approximately £6 million to active travel schemes including greenways. £13.5 million has also been committed to active travel from the Blue Green Infrastructure Fund in 2021/22.

The funds will be used to create safer routes for those who choose to walk, wheel or cycle and for active travel projects, such as secure cycle parking and cycle repair stations.

The Northern Ireland Civil Service (NICS) is reviewing ways of working since the Covid 19 pandemic. It is considering the adoption of a hybrid model which blends home/remote and office working, to realise potential benefits such as the environmental improvements from reduced commuting.

To support hybrid working, a number of regional Connect2 hubs, with accessibility to public transport, are being rolled out. These will enable staff to work closer to home, reduce travel time and promote regional economic balance.

Support the deployment of **public charge points** across Northern Ireland, to address the issue that Northern Ireland currently has the fewest EV charge points per capita of any of the UK nations.

Currently the Electricity Supply Board (ESB) is the main provider of electric vehicle charge points in NI, but the market is also open to other providers. A programme of work commenced in June 2021 to replace approximately 60 charge points i.e. 30 charge posts and a further 5 rapid charge points to upgrade and improve the reliability of the existing public network.

Revised permitted development rights came into operation on 21 December

2020, which have made it easier to expand the charging infrastructure for electric vehicles (EVs). A charging infrastructure plan is currently in development for the charging network.

We support the EU INTERREG VA and TEN T Funded FASTER electric vehicle network project which will complement and enhance the existing EV charging infrastructure, installing a total of 73 EV Rapid charging points across the island of Ireland and the West of Scotland.

The NI Executive's *Energy Strategy* includes a commitment to deliver an Electric Vehicle Charging Infrastructure Plan in partnership with key stakeholders to develop the charging network.

Resume collecting and publishing **data on vehicle-kilometres** travelled by mode in Northern Ireland. This will help identify which actions are effective in encouraging modal shift away from car travel.

Due to budget constraints the Vehicle Kilometres Travelled (VKT) data has not been published in Northern Ireland since 2014. However, we will develop robust data and undertake evaluation surveys to measure the impacts on emissions.

Planning for the Future of Transport – Time for Change^{lxviii} was published on 3 June 2021 and describes how priorities for the future of transport in NI can be supported by the improved planning, management and development of the transport networks over the next 10 to 15 years.

Research into modal shift has also been carried out, and we conduct the Travel Survey for Northern Ireland (TSNI), which collects information on how and why people travel within NI.

Long-haul air passenger duty, which is devolved to Northern Ireland, should be increased at least in line with UK-wide long-distance APD, to better reflect the climate change impact of flying.

As there are no scheduled direct long-haul flights currently departing from NI airports, the impact of such a change in NI would be minimal.

As an island, NI is reliant on air connectivity for trade, tourism and

investment. The NI Executive committed to eliminate APD on direct long-haul flights from NI to maintain and develop connectivity to key markets, including the US. It operates zero APD on Band B direct (long-haul) routes, thus incurring a Block Grant reduction for long haul APD (c.£2.3 million per annum).

The Executive supports commitments to reach net zero emissions by 2050. However, due regard must be given to our unique circumstances, and where there is no equivalent APD on either short or long-haul flights in the South of Ireland.

The Finance and the Economy Ministers have written to the Chief Secretary to the Treasury (CST) setting out concerns about the impact of APD on our connectivity.

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