



National Audit Office

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## Report

by the Comptroller  
and Auditor General

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**HM Government**

# Achieving net zero

# Summary

## Introduction

**1** In June 2019, government passed legislation committing it to achieving 'net zero' greenhouse gas emissions by 2050. This means reducing emissions substantially from current levels, with the greenhouse gases the UK still emits in 2050 being equal to or less than what is removed from the atmosphere by either the natural environment or carbon capture technologies. Government set the net zero target to deliver on the commitments it had made by signing the Paris Agreement in 2016. The Paris Agreement has seen 188 countries and territories commit to pursuing ways to limit global temperature rises this century to well below 2 degrees Celsius above pre-industrial levels and to try to limit the temperature increase even further to just 1.5 degrees Celsius. Government also aimed to set an example for other countries to follow in the run-up to hosting the 26th United Nations' Climate Change Conference of the Parties (COP26). The conference is due to take place in Glasgow in November 2021, having been postponed from November 2020 due to the coronavirus pandemic.

**2** Aiming for net zero represents an increase in the level of ambition from government's previous emissions reduction target. In 2008, government set a target for the UK to reduce its greenhouse gas emissions in 2050 by 80% compared with 1990 levels. Between 2008 and 2018, the UK's emissions reduced by 28%, faster than any other G20 economy. Most of this reduction has come from changes to how electricity is generated, with a switch away from coal and increasing amounts coming from renewable sources such as wind and solar power. Reducing emissions further to achieve net zero will require wide-ranging changes to the UK economy, including further investment in renewable electricity generation, as well as changing the way people travel, how land is used and how buildings are heated.

- 3** The all-encompassing nature of achieving net zero means that all government bodies, including departments, arm's-length bodies and executive agencies, have a role to play. But some departments have key roles:
- The Department for Business, Energy & Industrial Strategy (BEIS) has overall responsibility in government for achieving net zero. This means it is responsible for ensuring cross-government arrangements are working effectively. It also has policy responsibility for some of the highest-emitting sectors of the economy, such as the power and industrial sectors.
  - HM Treasury is responsible for allocating budgets to government departments. Therefore, it is central to assessing the relative priority of policies across government and ensuring that departments have sufficient financial resources to manage programmes aimed at reducing emissions. It is currently reviewing how the costs of net zero should be shared between government, businesses and individuals. HM Treasury is also responsible for strategic oversight of the tax system.
  - The Cabinet Office supports the operation of the Cabinet committees, which are the minister-led committees responsible for overseeing emissions reduction. Additionally, the Cabinet Office coordinates cross-cutting corporate functions that have a bearing on government's own emissions, such as around managing estates and procurement, and the creation of Single Departmental Plans, which are the main way that government conducts strategic business planning. It is also carrying out a programme of work aimed at modernising and reforming the civil service, including improving working across departmental boundaries.
  - The Department for Environment, Food & Rural Affairs (Defra), the Department for Transport (DfT) and the Ministry of Housing, Communities & Local Government (MHCLG) all have policy responsibility for different sectors of the economy with high emissions. MHCLG is also the government's steward of the local government system and aims to ensure local authorities can function effectively. Local authorities themselves have a key role in supporting emissions reduction at a local level.

## **Purpose and scope of this report**

**4** This report is intended to support Parliamentary and public scrutiny of government's arrangements for achieving net zero. We have applied our experience from auditing cross-government challenges to highlight the main risks government needs to manage if it is to achieve net zero efficiently and effectively. This report is a companion to our recent report *How government is organised to achieve its environment goals*.<sup>1</sup> That report provides a similar analysis of government's arrangements to achieve the objectives of its *25-Year Environment Plan*, including to ensure the UK adapts to the impacts of climate change.<sup>2</sup> In the future, we will: assess how well government is managing the risks highlighted in this report; and assess the value for money of individual government interventions aimed at reducing emissions.

**5** This report covers:

- the scale of the challenge to achieve the net zero target, and the roles and responsibilities for achieving net zero within government (Part One);
- the coordination arrangements that bring together the different government departments involved in achieving net zero (Part Two); and
- the government's plans for achieving net zero and the risks it needs to manage (Part Three).

## **Key findings and recommendations**

### Scale of the challenge

**6** **Achieving net zero is a colossal challenge and significantly more challenging than government's previous target to reduce emissions by 80% by 2050.**

Achieving net zero means all parts of the economy, including those that are harder to decarbonise, need to reduce emissions substantially. In some sectors, there are well-understood pathways to net zero but there is uncertainty in other sectors over how to reduce emissions. This is because it is not yet known how quickly some technologies will develop or how much individuals will be willing to change their behaviours. Also, the majority of reductions in greenhouse gas emissions achieved to date have been in the power sector, which required consumers to change their behaviour less than will be necessary for other sectors that need to decarbonise, such as heat and transport (paragraphs 1.6 to 1.9 and Figures 1 to 4).

<sup>1</sup> Comptroller & Auditor General, *Achieving government's long-term environmental goals*, Session 2019–2021, HC 958, National Audit Office, November 2020.

<sup>2</sup> HM Government, *A Green Future: Our 25 Year Plan to Improve the Environment*, 2018.

**7 BEIS projects that the UK's emissions will exceed government's shorter-term targets without further action to close the gap. These targets are set at a level that is less ambitious than will be required to achieve net zero.**

BEIS's latest projections show that the UK's emissions will be higher than the level set by the fourth and fifth carbon budgets, which are legally binding targets for UK emissions over a five-year period from 2023 to 2027 and 2028 to 2032, respectively. BEIS has been predicting emissions that exceed the fourth carbon budget since 2011. These carbon budgets were set on a trajectory to reduce emissions by 80% by 2050, not to achieve net zero. In 2021, government will set the level of the sixth carbon budget, covering 2033 to 2037, at a level requiring faster progress in reducing emissions so it is on the pathway to achieving net zero by 2050 (paragraphs 1.4, 1.7 and 3.4, and Figures 3 and 10).

**8 The costs of achieving net zero are highly uncertain but the costs of inaction would be far greater.**

There are costs to achieving net zero because of the need to switch to new technologies that in some cases are more expensive than those currently used, and the need to build new infrastructure to accommodate them. The exact amount and timing of future costs are very uncertain because there are several potential ways to achieve net zero. The Climate Change Committee (CCC), in 2019, estimated that the annual costs of achieving net zero could increase over time to being around 1%–2% of GDP in 2050. BEIS is developing its own estimate of what net zero will cost between now and 2050, with this likely to be hundreds of billions of pounds. The CCC will also publish shortly revised analysis of the potential costs of net zero. HM Treasury will investigate how these costs could be shared between government, businesses and individuals. As part of this review, which will conclude in 2021, HM Treasury will consider the range of policy instruments that might be used to support decarbonisation, including the role of regulation. The costs of inaction would be far greater than the costs of achieving net zero because of the need to adapt to substantial climate change, such as building flood defences and dealing with the health impacts of higher temperatures. The CCC has also suggested there are wider benefits of achieving net zero, such as improvements to human health and enhanced biodiversity (paragraphs 1.10 to 1.14).

## Co-ordination across government

**9 Government has established new coordination arrangements since setting the net zero target.** This includes: two ministerial-level cabinet committees; a Climate Change National Strategy Implementation Group (NSIG) made up of senior officials from across departments; and a Net Zero Steering Board for strategy and delivery. The four main departments with lead responsibility for decarbonising sectors of the economy have also set up boards to oversee delivery of their policies aimed at reducing emissions. The development of government's coordination arrangements has been set back by the need to focus resources on tackling COVID-19, with fewer meetings of some new boards than planned. Government also redeployed resources to investigate how it might integrate net zero into the COVID-19 recovery, with new governance arrangements set up to consider which net zero initiatives could contribute. Government implemented arrangements to coordinate its action to reduce greenhouse gas emissions after passing the Climate Change Act in 2008, but these did not endure (paragraphs 2.2 to 2.5 and Figures 6 and 7).

**10 Past examples of cross-government working show there are risks government needs to consider carefully for its net zero arrangements to be effective.** Government's coordination arrangements for achieving net zero aim for collective ownership rather than there being a single central body with the responsibility and levers to achieve change. Our previous work shows instances where departments leading cross-government objectives struggled with implementation and ensuring all departments play their part. This has been because, for example, the objective has not been given sufficient priority by all departments when it comes to allocation of budgets or when appraising new policies, and because wider government accountability and planning structures have not encouraged collaboration across departments. There also needs to be sufficient capability across the system in terms of technical and behavioural skills and routine sharing of information and learning across departments (paragraphs 2.6 to 2.18).

BEIS, working with HM Treasury, Cabinet Office and the other departments with responsibility for aspects of net zero should:

- set out how it will manage the risks we have identified in this report (paragraphs 2.11 to 2.18) to creating collective responsibility for net zero; and
- establish regular review points, starting with a review by the end of 2021, to consider the effectiveness of the arrangements, including those established within departments such as carbon boards, and whether changes are required.

Cabinet Office should:

- ensure the next iteration of Single Departmental Plans creates a cross-government plan for achieving net zero; and
- utilise its programme of work aimed at modernising and reforming the civil service to increase the visibility of net zero within the civil service and develop key skills, such as in climate science, data analysis and systems thinking, that will be necessary to achieve net zero.

HM Treasury should:

- publish analysis shortly after the next Comprehensive Spending Review, which will allocate high-level budgets to departments in the medium term, demonstrating its impact on expected emissions; and
- ensure its guidance that informs public spending decisions, such as on policy appraisal (the *Green Book*) and guidance for accounting officers, requires departments to evaluate the impact of policies on the achievement of the net zero target, and is consistently adhered to.

**11 Government has not set out clearly the roles of public bodies outside central departments in achieving net zero.** Arm's-length bodies, regulators and local authorities all have critical roles in the achievement of net zero. Our past work has shown that roles and responsibilities need to be clear and that the perspectives of different delivery bodies need to be incorporated into plans to achieve cross-cutting policy objectives. Local authorities will be key in the achievement of emissions reductions in the transport and housing sectors locally where the decarbonisation challenge will vary by location. But local government representatives we have spoken to have said there is a lack of clarity from central government on the role local authorities should play in achieving net zero. BEIS told us that it plans to engage with local authorities about their role as part of the creation of the net zero strategy (see paragraph 13) and that their roles will become clearer once government publishes sector strategies, such as for heat and transport (paragraphs 2.19 to 2.23).

BEIS and MHCLG should:

- ensure that local authorities' perspectives are incorporated into the formation of sector strategies and the overall net zero strategy; and
- ensure local authorities have the skills and capacity to mobilise the action that is required locally across all sectors.

BEIS, working with other government departments, should:

- consider how to extend its coordination arrangements beyond central government departments to include the perspectives of other public bodies.

**12 Government has not yet done enough to ensure that all public sector organisations take the actions necessary to reduce their own emissions.**

It is important that government leads by example as part of its overall efforts to reach the net zero target and takes opportunities to pilot initiatives and develop supply chains for low-carbon technologies that could be beneficial to the wider economy. In 2018, emissions from public-sector buildings represented 9% of all emissions in the buildings sector. Government sets Greening Government Commitment targets for reducing the environmental impact of its central estate and operations, including reducing emissions. Central government departments have reduced emissions from their buildings and operations by an estimated 46% since 2009-10. But these targets only cover central government's estate, excluding significant areas of impact such as schools, the NHS and military activities. And while there are some minimum requirements for government procurement which relate to greenhouse gas emissions, our past work has noted that these are out of date and compliance has not been monitored. On 30 September 2020, government launched a Public Sector Decarbonisation Scheme to invest £1 billion over the next year to increase public sector buildings' energy efficiency and reduce emissions from heating, along with a £32 million Public Sector Low-Carbon Skills Fund (paragraphs 2.24 to 2.26 and Figure 8).

Cabinet Office and HM Treasury, working with BEIS, should:

- ensure that existing and planned arrangements to help departments reduce their own greenhouse gas emissions align with achieving net zero. In particular, ensure that the new Greening Government Commitment targets, due for release in April 2021, are sufficiently ambitious to set an example to businesses in the UK; and
- ensure that similarly ambitious targets extend to all significant sources of emissions from the public sector, including schools and the NHS.

## Delivering the net zero strategy

### **13 BEIS plans to launch a net zero strategy prior to COP26 in November 2021.**

It aims that this strategy will set out government's vision for transitioning to a net zero economy by 2050, encompassing all the sectors that need to decarbonise. The strategy will be the culmination of the announcement of policies aimed at closing the gap to the fourth and fifth carbon budgets; setting the level of the sixth carbon budget; sector-by-sector strategies setting out pathways to decarbonisation by 2050; and HM Treasury publishing its review on the cost of net zero and principles for how it could be paid for. Government aims to integrate its plans for establishing a net zero strategy within its wider economic response to COVID-19 (paragraphs 3.2 and 3.3, and Figure 9).

BEIS should:

- prepare contingency plans that consider how to provide greater certainty and transparency around its net zero plans even if a full strategy is not possible prior to COP26 given the ongoing uncertainty around the impact of COVID-19.

**14 Establishing a clear strategy before COP26 is a critical step if the UK is to achieve net zero by 2050.** Our past work on major projects and programmes has demonstrated the importance of government clearly defining what it is aiming to achieve from the outset. This enables it to identify the people, policies and funding that are needed, both within government and the wider set of actors which it is dependent on, such as businesses and individuals. While doing this for net zero, government must also enable flexibility in its plans to accommodate longer-term uncertainty, such as the rate of technology development and deployment and the degree to which individuals change behaviours. BEIS told us that its strategy would reflect the level of uncertainty in each sector and include milestones for when decisions are needed, such as the preferred technology for decarbonising the heating of buildings (paragraphs 3.5 to 3.9).

BEIS should:

- identify and evaluate the elements of the net zero strategy which are uncertain and develop a plan to reduce this over time, including assigning responsibilities for managing reduction in uncertainty (such as by carrying out sufficient research or piloting); and
- set out its timetable for when key decisions in the pathway to net zero will need to be taken.

**15 Government still needs to identify how it will manage the links between different aspects of achieving net zero and how it relates to other government priorities.**

One of the complexities of the challenge to achieve net zero is that the different aspects of reducing emissions will have an impact on one another. For example, the increasing take-up of electric vehicles to reduce surface transport emissions will increase demand on the power sector. There are also links between activities to achieve net zero and other government priorities. This includes both its other environmental goals, such as for clean air, and wider objectives such as its 'levelling up' agenda whereby it aims to create opportunity for everyone in all regions and address disparities in economic and social outcomes. BEIS has modelled the different activities in achieving net zero that impact on one another. It is now considering how to build on this model to ensure these interdependencies are well managed, including engaging wider expertise on taking a 'systems approach' that joins up policy areas as a whole rather than managing them in isolation (paragraphs 1.9 and 3.10 to 3.12).

BEIS should:

- ensure that the main interdependencies within the achievement of net zero are understood by the relevant departments involved;
- ensure the net zero strategy takes account of the main interdependencies between different work streams; and
- set out its plan for managing interdependencies in the future, including who is responsible for managing each interdependency and how it will review progress on a regular basis.

All departments with lead responsibility for decarbonising sectors (BEIS, Defra, DfT and MHCLG) should:

- work on widening government’s understanding of links between achieving net zero and other government aims, such as for clean air and ‘levelling up’; and
- use this understanding to establish how trade-offs between net zero and other aims will be managed, including the prioritisation of resources.

**16 BEIS recognises it needs to do more to establish monitoring arrangements to track progress towards net zero.** BEIS reports actual and forecast greenhouse gas emissions annually, broken down by sector, which gives a high-level view of whether the UK is on track to meet net zero. It also projects annually the effect of government policies on reducing future greenhouse gas emissions. But there is currently no process for monitoring the progress of policies on a more regular basis or for escalating problems identified by monitoring information. This limits decision-makers’ oversight of whether policies are on course to achieve the necessary emissions reductions and may affect their ability to act early if things go off track. BEIS is working to establish how performance will be reported to the NSIG and Cabinet committees (paragraphs 3.13 to 3.17 and Figure 11).

BEIS, Cabinet Office and HM Treasury should:

- develop and monitor a set of clear, relevant and consistent data on the progress of net zero policies across government along with a process for escalating issues when the data show policies are off track.

**17 Neither BEIS nor HM Treasury collates information on the total costs and benefits of government policies that contribute to achieving net zero.** Our work on government’s preparations for EU Exit found that government did not have spending information at a cross-government level and relied on existing control frameworks and systems of departmental accountability. This created risks to financial management, such as where reprioritisation of either EU Exit work or business-as-usual activity might be necessary, and public accountability. Similarly, government has not yet collated data on current and future spending on net zero-related policies, nor the benefits derived from this expenditure. In lieu of this information, we analysed recent spending proposals and found that, since 2017, government has committed around £20 billion to policies aimed at reducing greenhouse gas emissions. This does not include new commitments included in government’s *Ten Point Plan for a Green Industrial Revolution*, which it published in November 2020 (paragraphs 1.14 and 3.17, and Appendix Three).<sup>3</sup>

3 HM Government, *The Ten Point Plan for a Green Industrial Revolution*, November 2020.

BEIS and HM Treasury should:

- collate information on how much government is spending to achieve net zero overall, including how much it has committed and how much it has actually spent. This should include the costs of policies that go through consumers' bills.

**18 BEIS recognises the importance of engaging the public to achieve net zero and has recently begun considering how to do this in a coordinated way.**

Future emissions reductions are likely to require individuals to purchase different products to those they currently use, such as buying a zero-emission car, or to make more fundamental changes to how they live, such as reducing meat and dairy consumption. BEIS estimates that achieving net zero will cost less if the public understands and accepts the changes that are required. But there is evidence of a disconnect between public support for tackling climate change and people's understanding of the changes they need to make in their own lives. Additionally, our past work has shown that government often overestimates consumer buy-in to its policies aimed at reducing emissions. In April 2020, BEIS established a behaviour change and public engagement team for net zero to design a public engagement strategy and share good practice across government. It told us this team had not existed sooner because most prior decarbonisation policies had not required individuals to change their behaviour significantly (paragraphs 3.23 to 3.28 and Figures 12 and 13).

BEIS, with input from other departments, should:

- establish a public engagement strategy that sets out how government will ensure ongoing buy-in to the changes required by the transition to net zero. This should include consideration of how it will tailor its messages for audiences with different characteristics, including ethnic minorities; age groups; geographical locations; and income levels; and
- ensure it has data that enable it to monitor the cumulative social and economic impact on different individuals and communities of the transition to net zero so that government can consider whether to change course if it deems the burden is falling overly onto specific groups.

**19 BEIS's plans for engaging the private sector are more advanced but risks remain to securing the investment that is required.** Government depends on private sector investment to achieve net zero, both to develop and deploy low-carbon products, such as electric vehicles and heat pumps, and to provide the necessary infrastructure. In 2019, BEIS and HM Treasury published the Green Finance Strategy, which set out how government would mobilise green investment by establishing long-term policy frameworks, improve access to finance and address market barriers. Our past reports demonstrate the difficulties government faces when it seeks to share risks with the private sector and create investor confidence in new initiatives, and the importance of tracking progress where private sector engagement is a critical success factor (paragraphs 3.19 to 3.22).

BEIS and HM Treasury should:

- establish progress measures and monitoring arrangements that enable them to track whether they are achieving the required investment from the private sector.

## **Concluding comments**

**20** Government's reorganisation of its approach to tackling climate change reflects the high political priority attached to achieving net zero and the cross-government nature of the challenge. While emissions have reduced steadily over recent years, particularly in the power sector, achieving net zero will require wide-ranging changes across society and the economy at a pace which leaves little room for delay. BEIS, alongside the other departments involved, is yet to put in place all the essential components for effective cross-government working, such as integrated planning and progress monitoring, and processes to manage interdependencies, to ensure all of government steps up to this challenge. Beyond these internal structures government also needs to spearhead a concerted national effort to achieve the ambitious outcome of net zero greenhouse gas emissions by 2050. To do so, it needs to engage actively and constructively with all those who will need to play a part – across the public sector, with industry and with citizens – to inject the necessary momentum.