



National Audit Office

OVERVIEW 2019



# ENVIRONMENTAL PROTECTION

MARCH 2020

## ENVIRONMENTAL PROTECTION

This briefing summarises government's approach to environmental protection. It gives an overview of responsibilities across government, spend, and recent and planned changes.

It sets out the government's main targets for three key environmental issues (climate change, air quality and biodiversity) and summarises government's plans for meeting these targets, as well as some of the key steps that we and other scrutiny bodies have identified as critical to success.

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The National Audit Office (NAO) helps Parliament hold government to account for the way it spends public money. It is independent of government and the civil service. The Comptroller and Auditor General (C&AG), Gareth Davies, is an Officer of the House of Commons and leads the NAO. The C&AG certifies the accounts of all government departments and many other public sector bodies. He has statutory authority to examine and report to Parliament on whether government is delivering value for money on behalf of the public, concluding on whether resources have been used efficiently, effectively and with economy. The NAO identifies ways that government can make better use of public money to improve people's lives. It measures this impact annually. In 2018 the NAO's work led to a positive financial impact through reduced costs, improved service delivery, or other benefits to citizens, of £539 million.

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## —About environmental protection

**Environmental protection is about maintaining, and recovering where necessary, a healthy natural environment.**

The government's approach to environmental protection is directed by the UK's **25 Year Environment Plan**. Published in January 2018, this Plan set 10 long-term goals, covering issues such as clean air, clean water and climate change. The Plan links to several more in-depth government strategies on particular environmental issues, including the Clean Growth Strategy for mitigating climate change.

### 25 Year Environment Plan

#### Overall ambition

To improve the natural environment, within a generation

#### Goals

- 1 Clean air
- 2 Clean and plentiful water
- 3 Thriving plants and wildlife
- 4 Reduced risk from environmental hazards
- 5 Using resources more sustainably and efficiently
- 6 Beauty, heritage and engagement with environment
- 7 Mitigating and adapting to climate change
- 8 Managing exposure to chemicals
- 9 Enhancing biosecurity
- 10 Minimising waste

#### Key government environment and climate change strategies

- Clean air
- Biodiversity 2020
- Resources and waste
- National Adaptation Programme
- Clean growth

#### Note

- 1 This landscape is highly interrelated and there are multiple links between the 25 Year Environment Plan Goals and related government strategies. Government strategies where environmental improvement is not the primary aim may also contribute to the Goals.

Source: HM Government, *A Green Future: Our 25 Year Plan to Improve the Environment*; and key government environment and climate change strategies

## Environmental protection is a key aspect of sustainable development

**Sustainable development is about balancing environmental, social and economic objectives to deliver long-term equitable growth, to benefit current and future generations.**

In 2015, the UN agreed its 2030 Agenda for Sustainable Development. It has 17 goals, the aims of which are to eradicate extreme poverty, fight inequality and injustice and leave no one behind.

The UK is a signatory to the 2030 Agenda and has committed to delivering the Goals domestically and contributing to them internationally. Government presented a Voluntary National Review to the UN in July 2019 ([Appendix](#)).

Government's view is that the 25 Year Environment Plan is one of the ways in which it has shown its commitment to delivering the Sustainable Development Goals.

The UN Sustainable Development Goals



Source: [United Nations](#)

## Departmental responsibilities for environmental protection

The Department for Environment, Food & Rural Affairs has lead responsibility for all environmental policy areas apart from climate change mitigation, for which the Department for Business, Energy & Industrial Strategy has the policy lead.

Delivering the 25 Year Environment Plan will require effective inter-departmental working, with the Department for Transport, local government and the Ministry of Housing Communities & Local Government having particularly important roles.

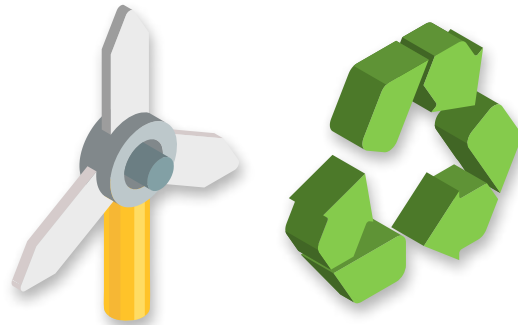
### Lead environmental policy responsibilities

#### Department for Environment, Food & Rural Affairs

Waste, water, fisheries, flooding, farming, forestry, air quality, soil (including peatlands), protected landscapes, environmental metrics

#### Department for Business, Energy & Industrial Strategy

Low-carbon energy, carbon budgets, green finance and research



### Other key responsibilities across government that affect delivery of its environmental goals

#### Department for Transport

Promotion of low-emission transport including carbon and other particulate emissions

#### Local government

Spatial planning, local flood risk management, building control, highways, trading standards, waste management

#### Ministry of Housing, Communities & Local Government

Planning framework and building regulations

#### HM Treasury

Tax incentives, including environmental taxes

#### Department for Exiting the European Union

Withdrawal from the EU, including transfer of all existing environmental law into UK law

# Government spending on environmental protection

We used [HM Treasury data](#) (which applies a UN-defined framework for classifying government expenditure) to identify **£4.7 billion** spending on environmental protection objectives by central government in 2018-19. Measuring government spending on environmental protection is not straightforward due to the range of activities and bodies involved.

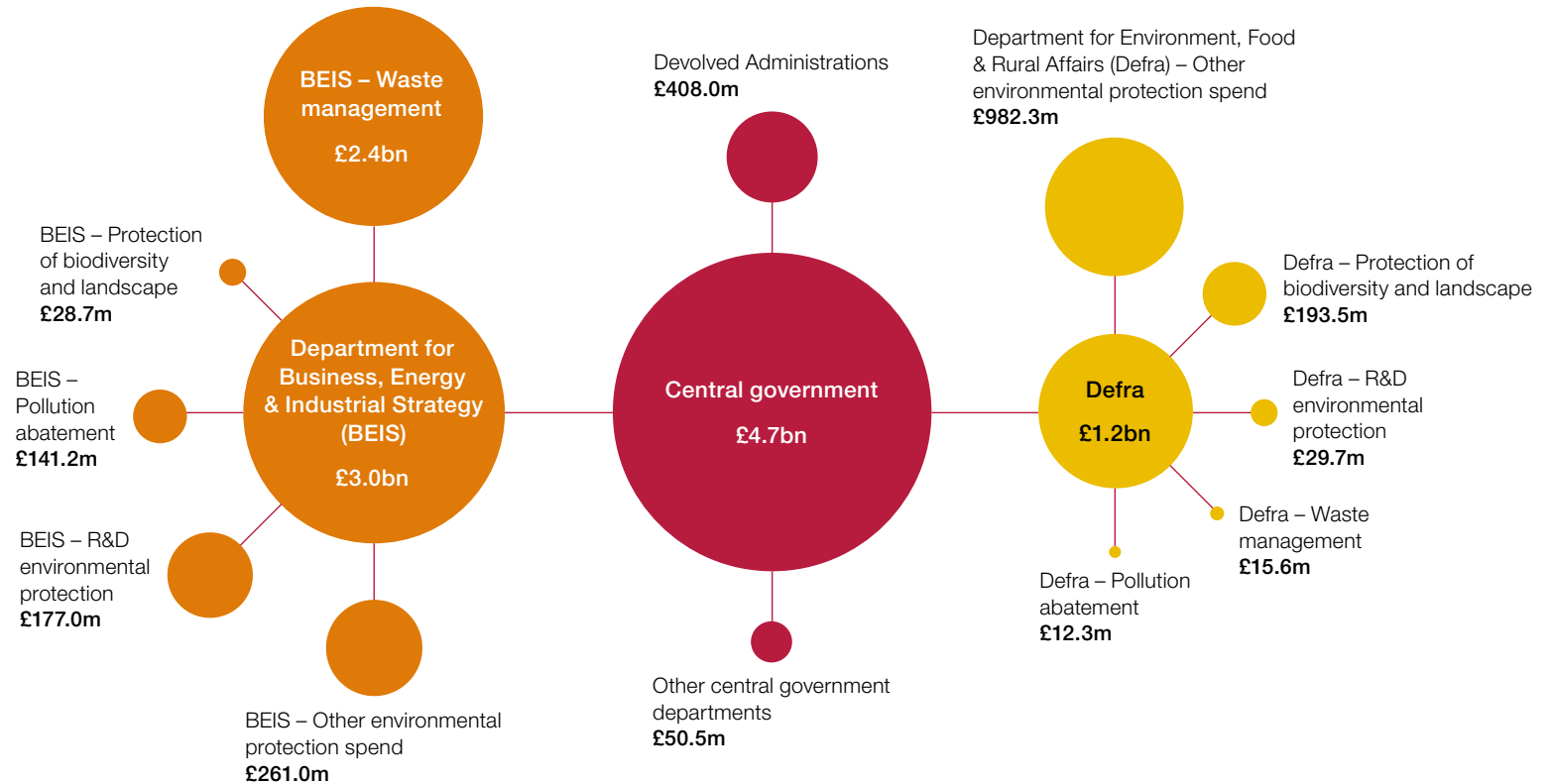
These data show that most spending by central government on environmental protection objectives in 2018-19 was recorded by two departments:

- £3.0 billion by the Department for Business, Energy & Industrial Strategy (BEIS) and its agencies; and
- £1.2 billion by the Department for the Environment, Food & Rural Affairs (Defra) and its agencies.

These data also identify spending by UK **local government** of £6.4 billion, of which £5.7 billion related to waste management.

Other assessments of spending on environmental protection are available; for example, this [Office for National Statistics survey](#) of environmental protection expenditure by government and industries (2017).

Spending by central government on environmental protection objectives, 2018-19



**Notes**

- 1 The dataset used to produce this chart classifies public expenditure according to its main objective. Other programmes which have environmental protection as a secondary objective are not included.
- 2 These figures are unaudited and have not been agreed to departmental accounts. Figures used represent both revenue and capital expenditure.
- 3 BEIS waste management spend primarily relates to the management of historic nuclear sites, while its expenditure on research and development (R&D) is through funding for the Natural Environment Research Council. Defra's other environmental protection spend primarily relates to flood risk management, funded via the Environment Agency.
- 4 Direct expenditure by government is only one route to funding environmental protection measures, other routes include levies and through regulation.
- 5 For each colour shown, the value in the centre circle is the sum of the values on the outer circles. Figures may not sum due to rounding.

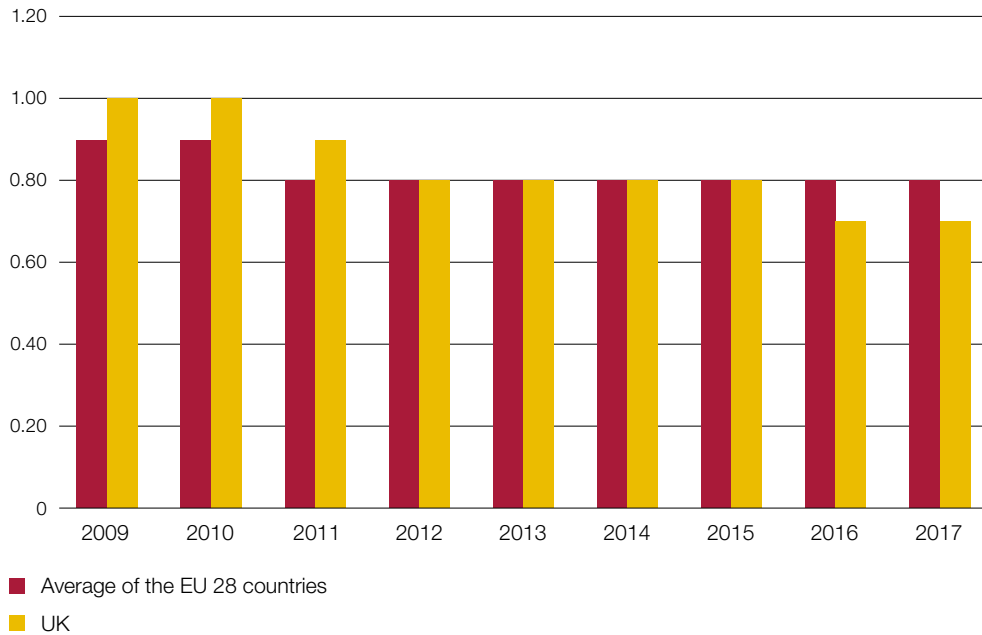
Source: National Audit Office analysis of HM Treasury Country and Regional Analysis data, published November 2019

# EU and UK average spend on environmental protection and funding for environmental regulators

UK and EU average spending on environmental protection per calendar year, as a percentage of GDP

UK spending on environmental protection was lower than the equivalent EU average measure in 2016 and 2017

Percentage of Gross Domestic Product (%)



**Note**

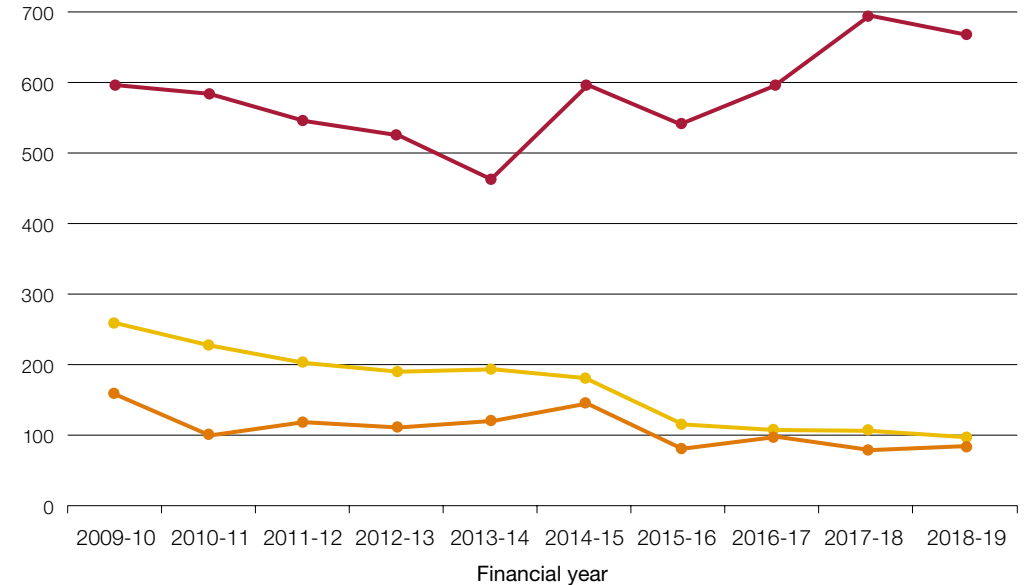
1 The statistics collected by Eurostat use expenditure reported by EU governments, broken down according to the UN classifications of the functions of government (COFCOG) framework. This calculation uses general government expenditure on environmental protection (division 5) and gross domestic product (GDP). The most recent available data are from calendar year 2017.

Source: National Audit Office analysis of Eurostat data.

Central government funding for main environmental regulators in England, in nominal terms (not adjusted for inflation)

Central government funding for the main environmental regulators in England decreased by 57% between 2009-10 and 2018-19, excluding funding for flood defence, which increased by 12%.

£ million



- Environment Agency flood defence funding
- Natural England total funding
- Environment Agency other environmental protection funding

**Notes**

- 1 These are grant-in-aid figures and therefore include both capital and revenue elements.
- 2 In addition to the grant-in-aid funding shown in this figure, the Environment Agency receives charge income that it uses to fund both its environmental protection and flood defence work.
- 3 Environment Agency figures include the Defra Catchment Restoration Fund (received in 2012-13 and 2013-14).

Source: National Audit Office analysis of environmental regulators' annual accounts



## Progress on environmental protection

**Actions:** Government's first [progress report](#) against the 25 Year Environment Plan, published in May 2019, gave an update on the 40 priority actions government expects to make the most significant contribution to the Plan's goals:

### Four priority actions were completed in 2018-19:

- Published the *Resources and Waste Strategy* (December 2018).
- Published the *Clean Air Strategy* (January 2019).
- Appointed a National Tree Champion, Sir William Worsley (June 2018).
- Established the Council for Sustainable Business (2018).

### Thirty-two priority actions were in progress and considered on track, for example:

- Evaluating progress against its *Biodiversity 2020* strategy (published 2011).
- Supporting the development of a new Northern Forest.
- Consulting on a third tranche of Marine Conservation Zones.
- Achieving zero avoidable plastic waste by the end of 2042.

### Four priority actions were delayed:

- Improving soil health and restoring and protecting peatlands.
- Putting in place more sustainable drainage systems.
- Minimising the risk of chemical contamination of water.
- Developing local natural capital plans.



**Outcomes:** Our January 2019 report on **environmental metrics** concluded that while government's plans for a new framework to measure the overall state of the natural environment were promising, it had more to do to ensure that the framework would give an authoritative position.

The report highlighted:

- significant gaps in government's data;
- the need to set clear expectations about how performance against the indicators will need to improve to meet the 25 Year Plan Goals; and
- the need to ensure strong 'whole of government' ownership of the framework, with all parts of government actually using this information to monitor progress and take action if performance is not improving as quickly as expected.

In September 2019, the **Natural Capital Committee** reported its concerns about the lack of outcome data in government's progress report:

"The Progress Report fails to draw on consistent robust data on all elements of the environment and fails to assess if the environment has improved. This is inevitable due to the absence of a baseline against which progress can be measured... Reporting on progress must go beyond a summary of what actions or administrative processes have been taken over a particular time period."

Natural Capital Committee





## Recent developments in environmental legislation

### Net zero emissions target



**June 2019:** The UK government amended the Climate Change Act to include a new net emissions target of 100% reduction from 1990 levels by 2050 (up from 80%).

This followed a recommendation from the Committee on Climate Change:

“A net-zero GHG (greenhouse gases) target for 2050 will deliver on the commitment that the UK made by signing the Paris Agreement. It is achievable with known technologies, alongside improvements in people’s lives, and within the expected economic cost that Parliament accepted when it legislated the existing 2050 target for an 80% reduction from 1990.”

Committee on Climate Change, *Net Zero* report

### Ivory Act



The Act will:

- Introduce a total ban in dealing in items containing elephant ivory in the UK, with narrow exemptions.
- Establish new compliance processes and enforcement provisions, including sanctions.

### Environmental legislation expected in this Parliament

#### Environment Bill

Includes provisions to establish new long-term domestic environmental governance:

- To bring into law environmental principles and long-term legally binding targets, including on air quality.
- To create an **Office for Environmental Protection**:  
“a world-leading environmental watchdog that can robustly hold the Government to account, including powers to take the Government to court.”

Other provisions introduce:

- New powers for local authorities to tackle air pollution.
- Charges for some single use plastic items and a ban on exports of plastic waste to non-OECD countries.

#### Agriculture Bill

Key elements include:

- Reform of UK agriculture policy and the support system.
- New schemes to pay for ‘public goods’ including environmental protection, access to the countryside, and work to reduce flooding.

#### Fisheries Bill

Key elements include:

- New arrangements for access to UK waters.
- Measures concerning the sustainability of marine life and the marine environment.
- A new framework to manage fisheries outside the EU Common Fisheries Policy.

Source: [Briefing note on the Queen’s Speech, December 2019](#)



## Exiting the European Union

From **31 January 2020** the UK will no longer be a member of the political institutions of the European Union. The UK's exit from the EU will require changes to the legal, regulatory and funding framework for environmental protection in the UK.

### Environmental protection in the UK after EU Exit



The European Union (Withdrawal) Act 2018 and the European Union (Withdrawal Agreement) Act 2020 allow for EU law, including environmental law, to continue to apply in the UK between 31 January and 31 December 2020, or later if the EU and the UK agree to extend the transition period. At the end of the transition period, this body of retained EU law will be transferred into law in the UK.

As an EU member state, the UK committed to uphold common environmental principles and participate in EU regulatory frameworks. After 31 January:

- the Environment Bill includes provisions to put environmental principles into law and establish new domestic governance for environmental protection through an Office for Environmental Protection; and
- the Withdrawal Agreement Act (2020) gives the UK courts powers to uphold rules of EU law incorporated into the Withdrawal Agreement, both during the transition period and afterwards.

### EU funding and finance

Under the terms of the Withdrawal Agreement:

- the UK will remain in the Common Agricultural Policy until the end of the 2014–2020 EU funding framework. While this applies, both direct payments to farmers and payments under rural development programmes, will be funded by the EU; and
- EU-funded programmes – including schemes for or with environmental benefit such as the LIFE programme and the European Maritime and Fisheries Fund – will remain open to UK applicants until 31 December 2020, with projects agreed by this date funded by the EU until complete.

Government expects the UK's relationship with the European Investment Bank – which has provided funding for developing and expanding the UK's offshore wind industry – to be explored during negotiations on the future relationship.

### The future relationship with the EU



The future relationship between the UK and the EU will be negotiated after 31 January 2020. In October 2019, the EU and UK made a non-binding political declaration on the future relationship, with references to environmental protection and access to funding and finance.

The political declaration states that the EU and the UK:

- will retain their autonomy and the ability to regulate economic activity... to achieve legitimate public policy objectives such as public health, animal health and welfare... [and] the environment including climate change;
- should... maintain environmental, social and employment standards at the current high levels provided by the existing common standards. The future relationship should also promote adherence to and effective implementation of relevant internationally agreed principles and rules... including the Paris Agreement [to mitigate climate change];
- recognise the importance of global cooperation to address issues of shared environmental interest and... should cooperate in international fora where it is in their mutual interest, on climate change; sustainable development; cross-border pollution; and public health;
- should consider cooperation on carbon pricing by linking a UK national greenhouse gas emissions trading system with the Union's Emissions Trading System;
- should cooperate bilaterally and internationally to ensure fishing at sustainable levels, promote resource conservation and foster a clean, healthy and productive marine environment, noting that the United Kingdom will be an independent coastal state; and
- will establish general principles, terms and conditions for the United Kingdom's participation in Union programmes... [and] note the United Kingdom's intention to explore options for a future relationship with the European Investment Bank (EIB) Group.

## Climate change

### Mitigation: targets and importance

Reducing greenhouse gas emissions (climate change mitigation) is necessary for the UK to play its part in limiting the worst effects of climate change, and is required as part of fulfilling international commitments and legal requirements.

The UK has committed to play its part in keeping global warming to well below 2°C above pre-industrial levels, and has set a target of net zero greenhouse gas emissions by 2050.

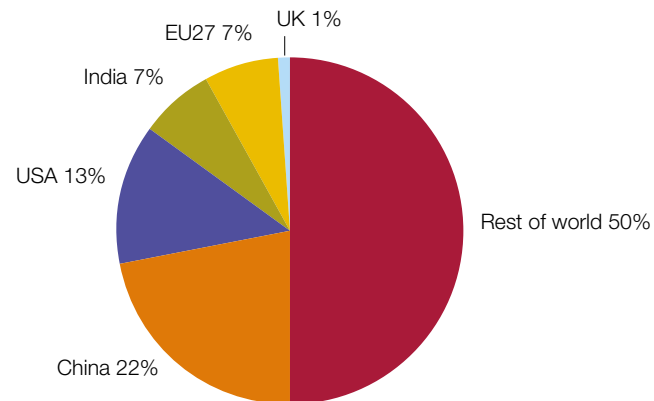


The UK has ratified the **Paris Agreement** (2016), the central aim of which is to “strengthen the global response to the threat of climate change by keeping a global

temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius”.

In June 2019, government amended the Climate Change Act (2008) to include a legally binding target for **net zero carbon emissions by 2050**. This extended the previous UK target of at least an 80% reduction on 1990 levels.

Globally, the UK produces approximately 1% of greenhouse gas emissions (2018), but has had a larger historical impact



Source: National Audit Office analysis of Grantham Institute – Climate Change and the Environment data

“The UK also has large cumulative historical emissions of CO<sub>2</sub>, despite only making up 1% of global population; 2%–3% of human-induced global warming to date has resulted from greenhouse gas emissions in the UK.”

Committee on Climate Change, *Net Zero* report, May 2019

## Climate change *continued*

### Mitigation: performance

**UK emissions of greenhouse gases fell by 43% between 1990 and 2018. The UK is likely to meet its emissions target to 2022 but it is not currently on track to meet its emissions targets beyond this.**

**Carbon budgets** set a legally binding target for UK emissions over a five-year period. They were a requirement of the Climate Change Act 2008 in order to work towards the goal of reducing greenhouse gas emissions by 2050.

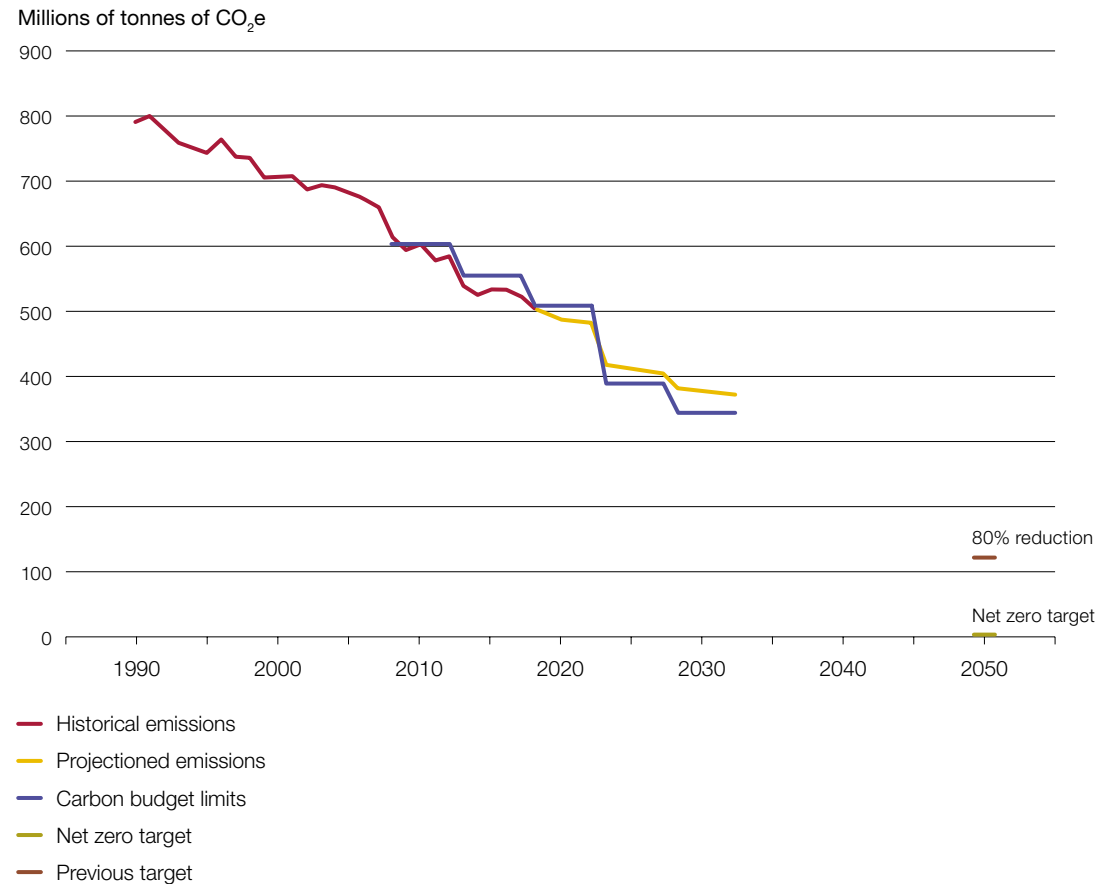
The first five carbon budgets, running up to 2032, have already been put into legislation. The UK met the first and second with headroom. Updated projections by the Department for Business, Energy & Industrial Strategy (BEIS, April 2019) show that the third carbon budget (2018 to 2022) is very likely to be achieved.

BEIS projections also show that the UK's emissions are set to be greater than the cap set by both the fourth (2023 to 2027) and fifth (2028 to 2032) carbon budgets.

Government plans to address this through implementing the policies and proposals set out in the Clean Growth Strategy (2017).

**The UK's carbon footprint** is a measure of greenhouse gas emissions associated with all the goods and services used by UK residents, including imports. This has shown less of a reduction, having fallen by 10% between 1997 and 2016.

Historic and projected UK greenhouse gas emissions compared with carbon budgets



#### Notes

- Carbon dioxide equivalent (CO<sub>2</sub>e) is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO<sub>2</sub>e signifies the amount of CO<sub>2</sub> which would have the equivalent global warming impact over 100 years.
- This chart shows emissions according to the UK's net carbon account, which includes an adjustment to reflect carbon trading under emissions trading schemes.

Source: CarbonBrief, May 2019

## Climate change *continued*

### Key components of government's plans for mitigating climate change, by sector

Sector	Surface transport	Industry	Heating and cooling of buildings	Power	Aviation and shipping	Agriculture, land use, land use change and forestry (LULUCF)
<b>Percentage of UK greenhouse gas emissions (2018)</b>	23%	21%	18%	13%	10% <sup>1</sup>	7% <sup>2</sup>
<b>How government plans to decarbonise</b>	End the sale of new conventional petrol and diesel cars and vans by 2040.  Encourage more efficient and low-carbon freight.	Greater efficiency across all businesses.  Transform manufacturing and heavy industry.	Develop a long-term policy roadmap for decarbonising heat (due in 2020).	Increase the proportion of electricity generated by low-carbon sources.  Deliver smarter, more efficient energy.	Modernise the domestic aviation and shipping sectors.	Provide clean growth opportunities to farmers and rural businesses.  Make land central to carbon capture and enhancing natural capital.
<b>Key anticipated steps over the next 5–10 years</b>	Continued investment in technology research and development, and charging infrastructure.  Work with industry as they develop an Automotive Sector Deal to accelerate the transition to zero emission vehicles.  New voluntary industry commitment to reduce heavy goods vehicle (HGV) greenhouse gas emissions by 15% to 2025.  25% of the central government car fleet to be ultra-low emission by 2022, towards 100% by 2030.	Support innovation in a low-carbon economy through market design, taxation and regulation.  New policy framework to support decarbonisation in energy-intensive industries by 2022.  <div style="border: 1px solid red; border-radius: 10px; padding: 5px; width: fit-content; margin: 10px auto;">Develop the first Carbon Capture Usage and Storage facility in the UK, operational from the mid-2020s.</div>	Measures likely to include: <ul style="list-style-type: none"> <li>investment to develop new energy efficiency and heating technologies to enable lower cost low-carbon homes; and</li> <li>phasing out the installation of high-carbon fossil fuels from rural homes and businesses off the gas grid during the 2020s.</li> </ul> <div style="text-align: center; border-top: 1px dashed red; margin-top: 10px;"><b>Industry and power sectors</b></div>	Phase out unabated coal to produce electricity by 2025.  Deliver new nuclear power through Hinkley Point C.  Agree further contracts for renewable generation through contract for difference auctions.  <div style="border: 1px solid red; border-radius: 10px; padding: 5px; width: fit-content; margin: 10px auto;">If costs decrease, more widespread use of Carbon Capture, Usage and Storage to decarbonise the electricity system in the 2030s.</div>	Involvement in international action, such as standards and offsetting schemes.  Joint commitments with industry to: <ul style="list-style-type: none"> <li>develop new aviation technology to 2026; and support for alternative fuels; and</li> <li>develop improved fuel efficiency technologies, for shipping.</li> </ul>	Introduce a new system to support farming and the countryside focused on environmental outcomes, including tackling climate change.  Invest in innovation in farming and forestry techniques.  Invest in large-scale woodland and forest creation; and peatland restoration.

#### Notes

<sup>1</sup> This is calculated using the latest available figures – domestic (2018) and international (2017).

<sup>2</sup> The LULUCF sector is a net carbon sink (that is, it removes carbon from the atmosphere). The total percentage is net of the deduction.

Source: National Audit Office analysis of Committee on Climate Change data; *Clean Growth Strategy, The Road to Zero*

## Climate change *continued*

### Scrutiny of government action to mitigate climate change

#### In 2018, we reported on one of government's programmes to reduce carbon emissions – the Smart Meter programme

Energy suppliers are legally obliged to take all reasonable steps to install smart meters in all homes and small businesses by the end of 2020. In addition to enabling a smart energy system, government sees smart meters as a way of reducing energy suppliers' costs and encouraging consumers to pay more attention to the energy they use, reduce energy consumption and increase competition in the market.

We identified “serious issues that need to be addressed if Smart Meters is to progress successfully and deliver value for money”. We reported that:

- the number of smart meters installed by the end of 2020 will fall materially short of the Department's original ambitions;
- BEIS decided to accelerate the roll-out of the smart meter programme without making an economic assessment of the implications, and the 2020 target increased risk to the value for money of the programme; and
- the costs of the programme had increased by £0.5 billion since the Department's last forecast (from £1.7 billion in March 2016 to £2.2 billion in March 2018) and could increase further.

**The Committee on Climate Change** (the CCC) is an independent, statutory body established to advise government on emissions targets and report to Parliament on progress made in reducing greenhouse gas emissions and preparing for climate change. The CCC produced two major reports on emissions in summer 2019.

In **Net Zero** (May 2019), the CCC highlighted specific actions for government to address the key areas of emissions across the economy:

- **Heating buildings** – an overhaul of the approach to low-carbon heating and energy efficiency is needed.
- **Carbon Capture and Storage (CCS)** – the first CCS cluster should be operational by 2026.
- **Electric vehicles** – by 2035 at the latest all new cars and vans should be electric (or use a low-carbon alternative such as hydrogen).
- **Agriculture** – policy to encourage farming practices that reduce emissions must move beyond the existing voluntary approach.
- **Waste** – bio-degradable waste streams should not be sent to landfill after 2025.
- **Low-carbon power** – the supply of low-carbon power must continue to expand rapidly.

These actions must be supplemented by stronger approaches to policy for industry, land use, HGVs, aviation and shipping, and greenhouse gas removals.



In **Reducing UK emissions – 2019 progress report to Parliament** (July 2019), the CCC stressed the need for urgent action. Government published [its response](#) in October 2019.

“We find a substantial gap between current plans and future requirements and an even greater shortfall in action.”

“The central premise of the Climate Change Act is that the government of the day holds the responsibility to act to protect future generations. This principle is at risk if the priority given to climate policy is not substantially increased over the next year and the next government spending review.”

**“The need for action has rarely been clearer. Our message to government is simple: Now, do it.”**

Committee on Climate Change, July 2019



## Climate change *continued*

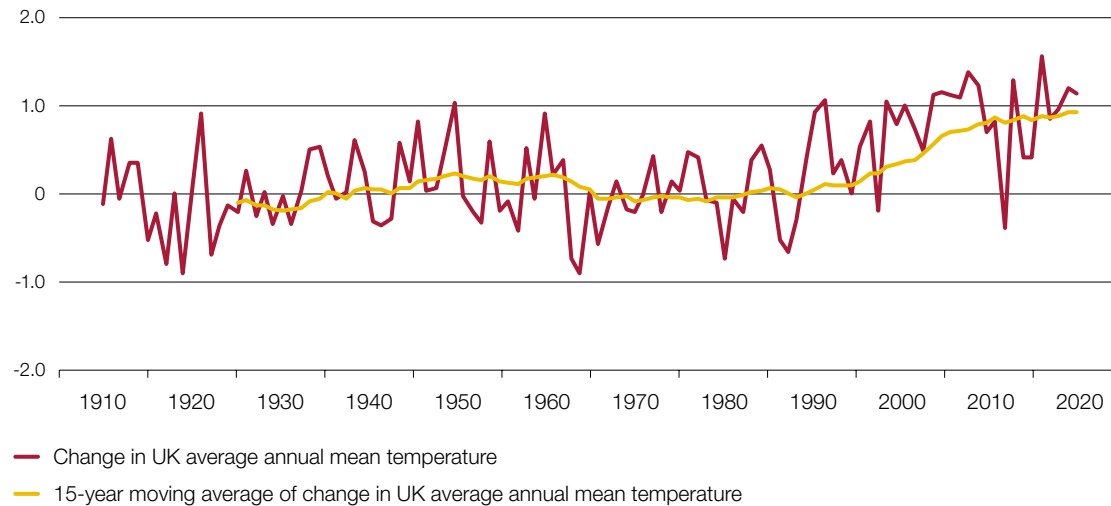
### Adaptation: importance

In addition to mitigating climate change, government recognises that a certain amount of climate change is inevitable and the UK will need to adapt. Even if net zero is achieved globally, our climate will continue to warm in the short term.

Change in annual mean temperatures for the UK (1910 to 2018)

In the UK, the climate has already warmed by around 1°C to 2018

Change in annual mean temperatures for the UK (°C)



#### Note

1 Change in UK average annual mean temperatures is measured as the average annual mean temperature minus the average annual mean temperature between 1961 and 1990.

Source: National Audit Office analysis of [Met Office, UK and regional series](#)

“Relying on emergency measures to assist with droughts over the next 30 years would cost an estimated £40 billion, whereas building resilience would cost £21 billion.”

National Infrastructure Commission, *Preparing for a drier future*, April 2018

“If global mitigation efforts fail, the risks posed by conflict, mass migration and catastrophic weather events could be severe.”

Office for Budget Responsibility, *Fiscal Risks report*, 2019



## Climate change *continued*

### Government's plans for, and scrutiny of, climate change adaptation

The Department for Environment Food & Rural Affairs' (Defra's) **National Adaptation Programme 2018 to 2023** (published in July 2018) sets out what government and others will be doing to be ready for the challenges of climate change in the UK.

The programme includes more than 100 actions across the following **six priority risk areas** government identified in its Climate Change Risk Assessment (2017):

- 1 Flooding and coastal change risks to communities, businesses and infrastructure.
- 2 Risks to health, well-being and productivity from high temperatures.
- 3 Risk of shortages in the public water supply, and for agriculture, energy generation and industry.
- 4 Risks to natural capital, including ecosystems, soils and biodiversity.
- 5 Risks to domestic and international food production and trade.
- 6 New and emerging pests and diseases, and invasive non-native species, affecting people, plants and animals.

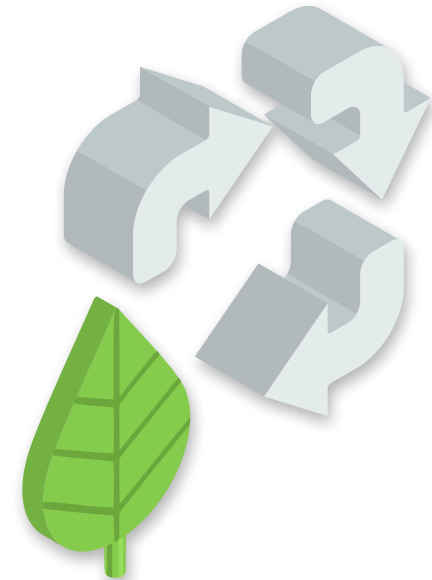
**A year after the current National Adaptation Programme was published, the Committee on Climate Change reported that little progress was being made in planning for and addressing climate change risk in key areas.**

"The government has failed to increase adaptation policy ambition and implementation through its latest National Adaptation Programme – despite the increasing urgency of addressing the risks from climate change."

"Key areas [where little progress is being made] include, but are not limited to, farmland habitats and species; agricultural productivity; commercial fisheries and aquaculture; development in areas of surface water flooding; infrastructure interdependencies; health impacts from heat and cold; and risks and opportunities to businesses."

"Effective plans, actions and evidence of risk reduction for adaptation are needed over the rest of this National Adaptation Programme period and beyond."

Committee on Climate Change, *Progress in preparing for climate change – 2019*, Report to Parliament (July 2019)



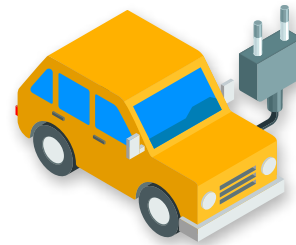
## Air quality

### Importance, targets and performance

Concentrations of pollutants in the air pose a risk to health and the environment. Government regards air pollution as the top environmental health risk in the UK.

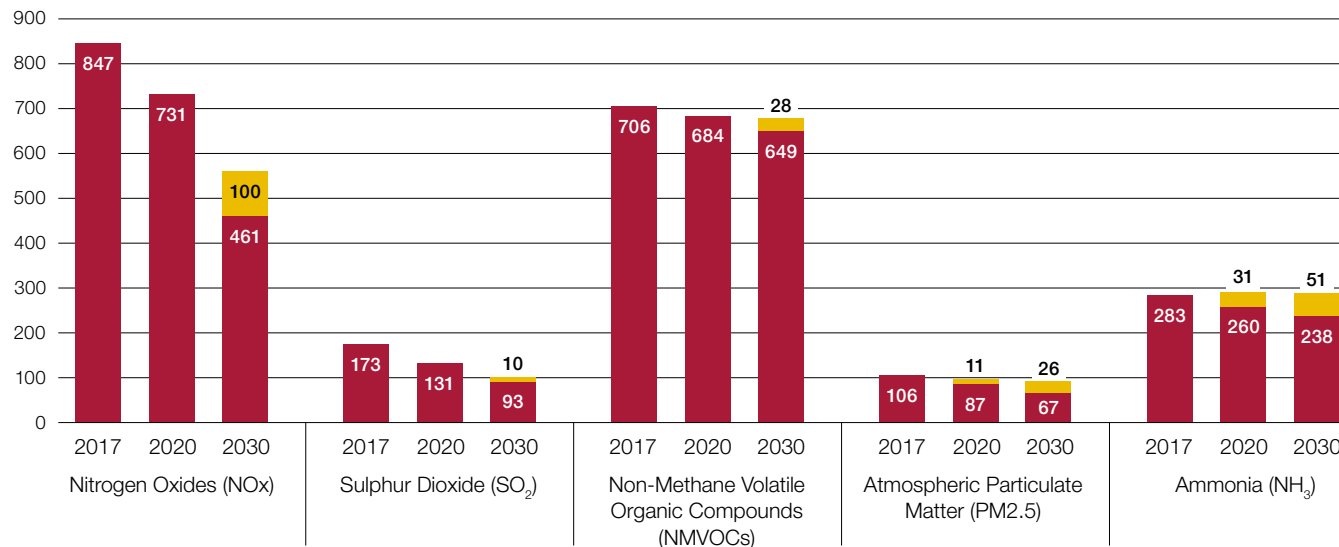
#### Emissions targets

The UK is committed to limiting **overall emissions** of certain pollutants below international target levels ('ceilings'), to reduce the UK's contribution to transboundary air pollution, by 2020 and by 2030. Without the new policies and commitments set out in its Clean Air Strategy, government expects the UK to exceed emissions ceilings for particulate matter and ammonia in 2020, and for all five key pollutants in 2030.



#### Most recent (2017) and projected (2020, 2030) emissions of five key pollutants

Emissions (thousand tonnes)



Actual and projected emissions by pollutant

■ Emissions below ceiling ■ Emissions above ceiling

#### Note

1 We have used the same methodology as applied for NECD emissions and ceilings calculations. This excludes emissions from agriculture from NOx and NMVOCs values.

Source: National Audit Office analysis of [National Emissions Ceilings Directive \(NECD\)](#); [European Environment Agency](#) and [The Department for Environment Food & Rural Affairs \(Defra\)](#) data

#### Concentrations targets

The nations of the UK also have targets to meet **air quality standards** by keeping localised concentrations of certain pollutants below specified limits.

Overall, the UK meets European **air quality standards** for all but one key pollutant: roadside nitrogen dioxide (NO<sub>2</sub>) concentrations.

In May 2018, the EU referred six member states including the UK to the European Court for "failing to respect agreed air quality limit values and for failing to take appropriate measures to keep exceedance periods as short as possible".

The World Health Organization also has guideline limits for air pollutions, which are in some cases more stringent than European standards. Government has committed to halve the number of people living in areas above the World Health Organization guideline limit on fine particulate matter (PM<sub>2.5</sub>) by 2025.



Government estimates that implementing the actions outlined in its Clean Air Strategy 2019 could cut the costs of air pollution to society by £1.7 billion each year by 2020, rising to £5.3 billion every year from 2030.

## – Air quality *continued*

### – Key components of government's plans to improve air quality, by sector

	Transport	Domestic	Agriculture	Industry	Public health
<b>Examples of priority, long-term ambitions</b>	<p>At least 50% to 70% of new car sales and up to 40% of new van sales ultra-low emission by 2030</p> <p>All new cars and vans to be effectively zero emission by 2040.</p>	<p>A nationwide approach to smoke control which can be built upon by local authorities.</p>	<p>Require and support farmers to invest in farm infrastructure and equipment that will reduce emissions.</p> <p>Require the adoption of low emissions farming techniques.</p>	<p>Support further investment in clean air innovation.</p> <p>Develop sector roadmaps to make UK industry world leaders in clean technology.</p>	<p>Continuously improve the evidence base on air quality in the UK.</p> <p>Improve the accessibility of air quality information, especially for vulnerable groups and during high pollution episodes.</p>
<b>Key actions or commitments in the short- and medium-term</b>	<p>In 2017, legally directed 33 local authorities to undertake a feasibility study and identify options for compliance with legal limits for nitrogen dioxide in the shortest possible time; and identify a preferred option by the end of 2018, with plans supported by an Implementation Fund and Clean Air Fund.</p> <p>Invest to support the take-up of ultra-low emission vehicles, 2015 to 2021.</p> <p>Review progress against the <i>Road to Zero</i> strategy Department for Transport (DfT, 2018) by 2025.</p>	<p>Legislate to prohibit the sale of the most polluting fuels and work with retailers to promote the most efficient stoves.</p> <p>Develop a communication campaign targeted at domestic burners, to improve awareness of the environmental and public health impacts of burning.</p> <p>Through the new Environment Bill, make changes to make smoke control legislation easier to enforce.</p>	<p>Provided practical and financial help for farmers through, for example, the Countryside Stewardship Scheme.</p> <p>Ensure the ammonia inventory reflects existing farming practice and the latest evidence on emissions.</p> <p>Focus future financial support for the farming sector on improving the environment, including air quality.</p>	<p>Regulate the emissions from medium combustion plants and generators (from January 2018) and keep the sector under review.</p> <p>Maintain continuity of legislation on industrial emissions as the UK leaves the EU.</p> <p>Determine future requirements for best available technologies in a way that is broadly consistent with the EU Industrial Emissions Directive.</p>	<p>Combine local and national monitoring data into a single accessible portal for information on air quality.</p> <p>Work with media outlets to improve public access to the air quality forecast.</p> <p>Work with regulators to include air quality in health professions' education and training.</p>

## – Air quality *continued*

### – Scrutiny of government's approach on air quality

Our 2017 briefing on *Air quality* supported a joint inquiry by the Environmental Audit Committee (EAC), the Environment, Food and Rural Affairs (EFRA) Committee, the Health Committee and the Transport Committee.

In 2016, 37 of the UK's 43 air quality zones had not complied with annual limits for nitrogen dioxide concentrations. The joint inquiry considered whether government's July 2017 plan to reduce roadside nitrogen dioxide concentrations would both reduce concentrations to meet legal limits and deliver the maximum environmental and health benefits.

Our briefing gave an overview of government's approach to improving air quality in the UK. We drew attention to the need for:

- **strong leadership and coordination within government**, to deliver substantial and sustained improvements in air quality; and
- sufficient **capacity and resource for local authorities** to manage the actions needed.

We also highlighted that while Defra and DfT had established a joint air quality unit, there was no clear single responsibility for the value for money of the portfolio of air quality initiatives as a whole.



The committees' subsequent report, *Improving Air Quality (2018)*, highlighted that air pollution costs the UK an estimated £20 billion a year; and that the UK has been unlawfully breaching nitrogen dioxide limit values since 2010.

The report found “an urgent need for national leadership and consensus-building to bring about a step-change in how the problem of air quality is tackled”.

Recommendations included, that government should:

- place the protection of public health and the environment, rather than technical compliance or political convenience, at the centre of air quality policy;
- align climate change schemes, urban planning, public transport and fiscal incentives with air quality goals to prevent government policy from working at cross-purposes;
- expand the remit of the Joint Air Quality Unit to track spending and impact on air quality measures across government; and
- introduce a Clean Air Act to improve existing legislation and enshrine the right to clean air in UK law.

In response, government acknowledged the need to do more on air quality. It highlighted strategies, including *The Road to Zero* (published July 2018) and *The Clean Air Strategy* (published January 2019) as the route through which government would achieve its goal of cleaner air.

Government's response set out steps that the Joint Air Quality Unit would take to maintain a cross-government record of money committed and spent on air quality. The unit told us it has since expanded its information on air quality spend, and commissioned an evaluation of local authority plans as part of government's approach to tackling nitrogen dioxide emissions.

## – Thriving plants and wildlife

### – Importance, targets and approach

Biodiversity is the variability among living organisms of all types, both between and within species and the ecosystems of which they are a part. It supports the benefits we received from the natural environment and contributes to our economy, health and well-being. Recently, the loss of biodiversity on a global scale has increased, with Britain reportedly having lost half its wildlife in the past 50 years.

The UK has committed to the Convention on Biological Diversity goals and targets ('the Aichi targets') agreed in 2010. As biodiversity policy is a devolved responsibility in the UK, each nation has developed its own strategy and indicators to track against international commitments. The current strategy for England is the **Biodiversity 2020** strategy, which government has committed to update.

#### Biodiversity 2020 action areas

##### 1 A more integrated large-scale approach to conservation on land and at sea

- Extent and condition of protected areas and priority habitats
- Animal and plant genetic resources
- Relative abundance and distribution of priority species



#### Biodiversity 2020: action areas



##### 3 Reducing environmental pressures

- Trends in pressure on biodiversity (for example, climate change)
- Integration of biodiversity into key production sectors (for example, agriculture)

##### 2 Putting people at the heart of biodiversity policy

- Taking personal responsibility for biodiversity
- Integrating biodiversity into local decision-making
- Sustainable consumption

##### 4 Improving our knowledge

- Availability of biodiversity data and information for decision-making

#### Plans to mandate net gain

- Government intends to use the forthcoming Environment Bill to mandate biodiversity net gain.
- This will require developers to ensure habitats for wildlife are left in a measurably better state than they were pre-development.

Source: The Department for Environment, Food & Rural Affairs, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, August 2011



## —Thriving plants and wildlife *continued*

### —Performance and scrutiny of government's approach

Our 2018 report on *The packaging recycling obligations* examined the risk in this system of UK waste contributing to plastic pollution in the oceans.

We reported that:

“The Environment Agency has low visibility and control over waste that is sold for recycling abroad and there is therefore a risk that some of it is not recycled under equivalent standards to the UK, and is instead sent to landfill or contributes to pollution.”

We concluded that:

“The system relies on exporting materials to other parts of the world, without adequate checks to ensure this material is actually recycled.”

Government has since published a new monitoring plan for increased inspections, and issued a consultation on wholesale reforms to the system.



The Natural Capital Committee and Natural England have raised concerns about government's overall progress on biodiversity

In its seventh annual report (2020) the Natural Capital Committee highlighted the challenge for government in meeting targets linked to its goal of thriving plants and wildlife:

- The 2050 UK net zero-related target of 17% woodland cover will require tree planting at a rate of 30,000 hectares per year; in 2018-19 only 13,400 hectares were planted.
- On restoring 75% of England's one million hectares of terrestrial and freshwater protected sites to favourable condition; the latest estimate stands at 39%, with the total having increased by 2% since 2011.

The report cites surveys that identified a decline in pollinators, farmland birds and sea birds; and increases in seals and aquatic mammals.

“On climate change, we have real momentum in the UK. On biodiversity we do not yet... We have to now invest in a larger-scale, more integrated, more ambitious programme for biodiversity conservation in this country.”

Tony Juniper, Chair of Natural England,  
oral evidence to Environmental Audit Committee,  
July 2019



## What to look out for

01

26th Conference of the Parties 2020 (COP26)



The UK has been successful in its bid to host this major UN climate change summit in Glasgow. COP26 is scheduled for November 2020.

COP26 is widely viewed as the most important climate change summit since COP21 in 2015, as countries with emissions reduction targets to 2025 must communicate the first new Nationally Determined Contributions to greenhouse gas reduction by 2020.

02

Greening Government Commitments (GGCs), next steps



GGCs targets 2016–2020 cover reducing government's emissions of greenhouse gases; reducing waste sent to landfill; buying more sustainable and efficient products and services; reducing water usage and being open and transparent.

Government's most recent annual report on the GGCs (for 2017 to 2018) was published in May 2019.

Government expects to meet its current GGCs targets by the end of financial year 2019-20 and is currently developing the next set of commitments.

03

UN Sustainable Development Goals summit, September 2019 – funding announced



This was the first UN summit on the Sustainable Development Goals (SDGs) since the UN adopted the 2030 Agenda in 2015.

At this summit, the Prime Minister announced up to £1 billion of aid funding to develop and test new technology targeted at tackling climate change in developing countries (the Ayrton fund); and a £220 million initial investment in the UK's International Biodiversity Fund, for projects aimed at halting the loss of habitats and species and saving those most at risk.

04

UCL Centre for Behaviour Change (CBC) creates enviro-hub



Launched in February 2019, the CBC enviro-hub aims to address economic, social and cultural aspects of environmental behaviour, including:

- What are the human factors and consequences?
- The role of new technologies in mitigating climate change and environmental damage.
- How to examine the costs to GDP, innovation and health care.

05

Citizens' Assembly on Net Zero target, due to report in 2020



In summer 2019, a group of Parliamentary Select Committees (Business, Energy and Industrial Strategy; Environmental Audit; Housing, Communities and Local Government; Science and Technology; Transport; and Treasury) announced a Citizens' Assembly on the Net Zero emissions target.

A Citizens' Assembly is a group of people, representative of the population, called to discuss an important issue and decide what should happen.

The Net Zero Citizens' Assembly will explore views on the fair sharing of potential costs of different policy choices; provide input to future select committee activity; and will inform political debate and government policy-making. The assembly is due to report in 2020.

06

Natural Capital Accounts, first iteration, December 2020



The Department for Environment, Food & Rural Affairs and the Office for National Statistics will complete their project to incorporate natural capital into the UK Environmental Accounts in December 2020, by which time they expect "a good set of initial accounts covering all habitats will be developed and usable".

Further and ongoing work will be needed beyond 2020, to capture difficult habitats and to adopt UN and other international standards for natural capital accounting.

## Appendix

### Recent action on sustainable development

The United Nations set **five focus Goals for 2019**. Examples of recent actions towards each focus goal in the UK Voluntary National Review include:



In England, government published its **Social Mobility Plan** (2017) and committed £7.2 million to tackle deprivation in 12 opportunity areas over three years.

The Scottish Attainment Challenge (from 2015) is focused on closing the poverty-related attainment gap, supported by the £750 million Attainment Scotland Fund.

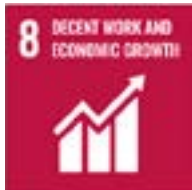


The Review cites the National Adaptation Programme, the 25 year Environment Plan (both 2018), and the Clean Growth Strategy (2017) as examples of the UK's commitment to climate action.

The UK supports renewable electricity generation through the investment incentive mechanism **Contracts for Difference (CfD)**. 2019 saw the third round of allocations for CfD funding.

The Scottish Government's Climate Challenge Fund (CCF), (from 2008) provided grants totalling more than £101 million to support low-carbon living. The latest CCF funding round closed in autumn 2019.

The Welsh Government Energy Service has invested more than £60 million of interest-free loans across the public sector in Wales (2015 to 2018).



Government commissioned an **independent review of the Modern Slavery Act** (May 2019). Some 7,000 potential victims of modern slavery were identified in the UK in 2018 – a 36% increase on 2017.

In 2018 government reported an overall **gender pay gap of 17.9%**, having introduced compulsory reporting in 2017.



The Government Equalities Office published a **Gender Equality Roadmap**; and a **Gender Equality Monitor** (July 2019). The Monitor will track equality indicators in economic participation, attitudes, education, justice and health.

The UK announced in November 2018 a £50 million package to support an African-led movement to end female genital mutilation by 2030.



In 2018, the UK government published a **Victims Strategy** to improve the experience and rights of victims of crime.

The **LGBT Action Plan** (2018) contains more than 75 commitments on LGBT equality, including tackling hate crime in England.

### Scrutiny of progress on sustainable development

Parliamentary inquiries into the Voluntary National Review in summer 2019 highlighted that, for example: stakeholder engagement was “limited and often at short notice”, and not in line with the commitment to leave no one behind. “Despite some strengths, too often the Voluntary National Review lacked coherence, depth and breadth of analysis, focusing instead on ‘cherry picked’ data and case studies at the expense of facing up to the challenges that remain to be tackled in the UK and around the world.”