



National Audit Office

Report

by the Comptroller
and Auditor General

Ministry of Defence

Environmental Sustainability Overview

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National Audit Office

Ministry of Defence

Environmental Sustainability Overview

Report by the Comptroller and Auditor General

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Gareth Davies
Comptroller and Auditor General
National Audit Office

5 May 2020

This report examines how far the Ministry of Defence has embedded environmental sustainability in its estate management, procurement, governance and policy-making.

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Key facts

827,822 tonnes	50%	42%
the Ministry of Defence's (the Department's) greenhouse gas emissions in 2018-19 as reported for the Greening Government Commitments (GGCs) (carbon dioxide equivalent)	the Department's share of central government's GGC reported greenhouse gas emissions in 2017-18 (carbon dioxide equivalent)	reduction in the Department's GGC reported greenhouse gas emissions since 2009-10 (carbon dioxide equivalent)
1.8 million tonnes	Departmental greenhouse gas emissions linked to defence operations in 2018-19 and excluded from GGC reporting (carbon dioxide equivalent)	
9%	reduction in the Department's non-GGC greenhouse gas emissions since 2015-16 (GGC emissions reduced by 26% in the same period) (carbon dioxide equivalent)	
Not known	future greenhouse gas emissions the Department has committed to in its current 10-year plan for equipment procurement and support	
169	Sites of Special Scientific Interest (SSSIs) on Departmental land (3.5% of Great Britain total)	
48%	Departmental SSSIs in 'favourable' condition when last assessed, against the English average of 39%	
1,700	number of ultra-low-emission vehicles (ULEVs), such as electric vehicles, the Department needs to be using by December 2022 to meet government targets	
12	number of ULEVs the Department currently leases, of which 10 are electric	

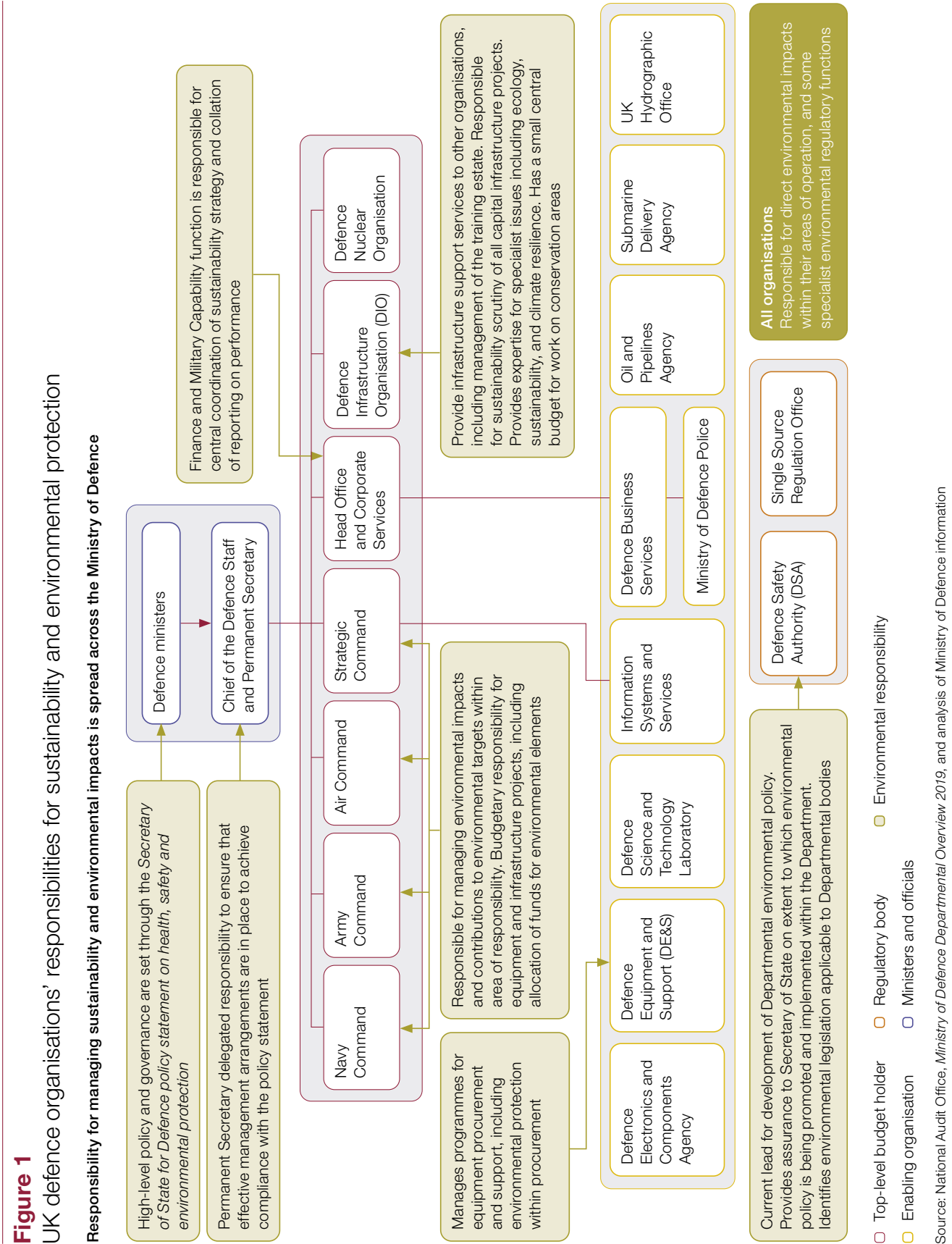
Summary

1 Responding to a request by the Environmental Audit Committee (EAC), this report gives an overview of the approach taken by the Ministry of Defence (the Department) to environmental sustainability. This is the sixth in a series of sustainability overviews we have produced for the EAC, each of which examines how different parts of government fulfil their sustainability remit.

2 Responsibility for environmental protection and sustainability is spread across the Department's Head Office, agencies and the front-line military Commands, as set out in **Figure 1** overleaf. The size and range of the Department's activities make it vital to government's ability to meet its environmental targets, particularly the Greening Government Commitments (GGCs) to reduce departments' impact between 2016 and 2020. The GGCs cover emissions, waste reduction, water use and 'green' procurement of goods and services. In 2017-18, the Department was responsible for half of the greenhouse gas emissions reported by central government. It also has significant sustainability impacts outside the scope of the GGCs. For example, emissions associated with operating and supporting armed forces' equipment are around twice as high as those reported through the GGCs. Also, over one-third of the Department's estate is made up of Sites of Special Scientific Interest (SSSIs), covering a larger area than those of any other government body.

3 It is the standard approach of our overviews to cover areas of activity common to all government departments that impact on sustainability (see Appendix One for more detail). They also take account of the individual circumstances of each department. Accordingly, this overview looks at:

- the significance of the Department for the ability of government to meet its sustainability targets and obligations (Part One);
- sustainability in estates and infrastructure, and the role of the Defence Infrastructure Organisation (DIO) (Part Two);
- the role of sustainability in procurement and the supply chain, and the role of Defence Equipment and Support (DE&S) (Part Three); and
- governance of sustainability within the Department, including the roles of the Department's Head Office, the Defence Safety Authority (DSA) and the front-line Commands (Part Four).



Key findings

Performance against the Greening Government Commitments

4 The Department has already achieved its GGC target to reduce greenhouse gas emissions by 39.9% from 2010 levels, but faces challenges achieving other GGC targets. It is in a good position to meet the central targets for waste reduction and reducing waste to landfill. However, based on 2018-19 data, it faces significant challenges in meeting targets on waste recycling, paper use and domestic flights. For example, it has reduced paper use by one-third since 2009-10, but the target is to reduce this by one-half. The central target for water use is unquantified and, although a reduction will be achieved, the Department expects to fall short of its own internal target for reducing water consumption (paragraphs 2.4 and 2.5, and Figure 8).

5 As the Department is responsible for half of all government GGC emissions, its 41% share of reductions achieved by government so far leaves scope for it to contribute more. The Department's energy mix is one-third grid electricity and two-thirds gas or oil. In the past 10 years the Department has made little progress in increasing the proportion of its energy drawn from renewable sources. If it did so, the Department could have a significant impact on the emissions figures for the whole of government. Planned reductions in the size of the defence estate will also be significant in reducing the level of Departmental emissions (paragraphs 1.3 and 2.5, and Figure 4).

6 A significant portion of the Department's energy usage is outside the scope of the GGC targets, and these emissions are reducing at a slower rate. Military activities, such as the operation of defence equipment (including for land vehicles, aircraft and navy vessels) by the armed forces, are out of scope for the GGCs, yet have a significant impact on the environment. Greenhouse gas emissions from these activities are double those reported through the GGCs, yet they are reducing at a slower rate and are not subject to formal targets. The Department plans to take the opportunity of its upcoming Integrated Security, Defence and Foreign Policy Review (Integrated Review) to develop wider targets to support government's legislative commitment to net zero greenhouse gas emissions by 2050 (paragraphs 1.4 to 1.6).

Stewardship of nationally important Sites of Special Scientific Interest

7 Natural England has assessed 48% of the Department's English SSSIs as being in favourable condition, but more than half have not been assessed since at least 2011. The Department has a budget of around £1 million a year for maintenance and improvement work on its 169 SSSIs. The proportion of sites in 'favourable' condition, compares well to the English average of 39%, but the assessments are increasingly out of date due to reductions in Natural England's inspection regime. The Department told us it lacks the resources to do its own assessments. As a result, it is unclear whether the assessments are still accurate. There is no monitoring by Head Office of whether good practice in site management is applied consistently across the estate (paragraphs 2.9 to 2.16).

Integrating sustainability into infrastructure projects

8 The Department has developed its own methodology for assessing the environmental impact of infrastructure. New-build and refurbishment projects are required to consider potential environmental impacts. The Department assesses infrastructure projects against its bespoke Defence Related Environmental Assessment Methodology (DREAM), which it sees as equivalent to the BREEAM approach used widely elsewhere, including by other government departments. In 2018-19, 96% of construction projects met the Department's target environmental rating ('excellent' for new-builds and 'very good' for refurbishments) (paragraph 2.8).

9 In practice, the Department has made limited progress in improving the energy efficiency of its buildings. Notwithstanding the high DREAM ratings, there is considerable scope for the Department to do more to improve the environmental performance of construction and refurbishment. Since 2016-17 only 38% of the Department's new-builds and major refurbishment projects have had low- or zero-carbon technologies included in the design. The Department is in the early stages of several infrastructure initiatives which seek to address the energy efficiency of the estate, although it is too early to judge the effectiveness, scalability and cost savings of these initiatives (paragraphs 2.7 and 2.8).

Integrating sustainability into procurement

10 The Department's sustainability guidance for delivery teams goes beyond that seen in other departments. The Department's sustainable procurement policy, and supporting guidance, requires staff to consider sustainability from the start of the procurement process, looking across the whole life of what is being procured. This is more than we have seen in other departments. Where defence procurements are exempt from environmental procurement standards, the Department's policy is to "maintain Departmental arrangements that are, so far as reasonably practicable, at least as good as those required by UK legislation". DE&S, which delivers equipment on behalf of the Department, also has a mandatory process for managing the environmental impacts of equipment projects (paragraphs 3.2 to 3.7, and 4.3).

11 The Department does not bring together its environmental impact assessments for individual equipment procurements to present an overall Departmental position. Each project or programme is required to produce an assessment of environmental risks. We have seen that this requirement is acted upon by project teams, resulting in the identification of a wide range of risks and associated mitigations across the lifecycle of the procured equipment. The assessments produced are bespoke and generally unquantified, which makes it difficult to combine them into a cumulative understanding of future impacts, and the Department has not done so (paragraphs 3.7 and 3.8).

12 The Department is not monitoring compliance with mandatory government sustainable procurement buying standards or its own environmental procurement framework. Departments are no longer required to report compliance with government's sustainable procurement buying standards. Consequently, the Department no longer monitors its own compliance with them beyond the construction standards referred to in paragraph 8, so does not know if it is compliant. When it last reported its performance – in 2016-17 – it achieved 100% compliance in four standards and more than 80% compliance in a fifth. It has not carried out an audit of compliance against its environmental procurement frameworks since 2017, when the approach was refreshed, and an expected audit at the end of 2019 has been delayed, with completion due by the end of June 2020 (paragraphs 3.6, 3.11 and 3.12).

Policy and governance

13 The Department has traditionally seen environmental sustainability as a subset of health and safety risks and hazards, making it a 'Cinderella issue'. We have not seen any other department link health, safety and environmental governance so closely. There are legitimate reasons for doing so in defence because the Department has unique and critical responsibilities for managing serious risks of hazard and damage. The Department's approach to the environment has focused only on the avoidance of incidents, rather than on the positive contribution it can make to government's wider environmental goals. A 2018 Departmental review of governance and resourcing in health, safety and environmental protection observed that environmental protection "is often treated as a 'Cinderella' subject" compared to safety (paragraphs 4.7 and 4.9).

14 The Department has started to reflect its environmental ambitions in policy documents, and to establish new ownership and accountability arrangements. The most recent Strategic Defence and Security Review – in 2015 – did not make any commitments relating to the role of environmental sustainability in security or defence. However, the 2019 Defence Plan, which takes direction from these policy documents, does detail the Department's environmental policies, plans and targets. It identifies safety and the environment as priorities and sets out targets and responsibilities associated with United Nations Sustainable Development Goals and the GGCs. These governance arrangements are more comprehensive than those seen in our previous work with other government departments. The Defence Plan does not, however, contain any specific activities, policy milestones or delivery dates to promote biodiversity and sustainable construction (paragraphs 4.2 to 4.4).

15 The government's net zero emissions target will present a significant challenge for defence and will be considered as part of the Integrated Review.

Government has legislated to set a target for the UK to have net zero greenhouse gas emissions by 2050. It has not yet decided whether the Department will be required to meet the net zero target, or whether residual emissions will be offset elsewhere. Either will require the Department to make major changes to its equipment and estate. Almost all vehicles and weapons in use, or under procurement, rely on fossil fuels, and some of the largest are expected to still be in operation in 2050. There are considerable opportunities to use Departmental land for initiatives such as the installation of renewable technology, notwithstanding its existing plan to reduce its built estate by 30% by 2040. The Department plans to examine the issue of how to maintain military capability while delivering net zero emissions in the government's ongoing Integrated Review (paragraphs 1.8, 1.9, 2.5 and 4.6).

16 The Department has identified that its oversight arrangements for environmental matters have not been functioning well. The Sustainable MoD and Energy Steering Group, which is intended to support the Department's sustainability champions, has not met since July 2018. In October 2018 DSA reported that it is "not currently able to provide adequate assurance" of environmental policy and regulation to the Secretary of State. In December 2018, a Departmental review of Head Office governance and resourcing in health, safety and environmental protection found that "the Department remains worryingly unsighted on its overall performance in respect of health and safety and environmental responsibilities", with ownership of environmental protection policy split between DSA and Head Office. The Finance and Military Capability function within Head Office has a central role in coordinating implementation across the Department, but no single body directs all activity. The Department has responded to these issues by establishing a new senior committee to lead on health, safety and environmental protection (paragraphs 4.5 to 4.9).

Conclusion

17 The Department is critical to the government's sustainability objectives, due to its size, supply chain, and the amount of land it controls. It has achieved some of the targets set for it through the Greening Government Commitments, including on greenhouse gas emissions, but has made less progress in other important areas. Environmental data in some areas is incomplete or historical. The Department has put in place guidance and methodologies to deliver against its environmental objectives, some of which goes beyond that which we have seen in other departments. However, it lacks the central oversight to gain assurance over whether the activity that is taking place is sufficient to deliver the desired outcomes, or to spread examples of the good environmental practice that we observed during our work. Activities at the local level have been subject to the dictates of a broader health and safety agenda, rather than being seen as a priority in their own right. It is encouraging that the Department is now carrying out a review of its response to the government's net zero emissions commitment, under senior leadership.

18 In **Figure 2** we set out the opportunities that the Department has available to make a major contribution to environmental sustainability, and the risks of not taking those opportunities.

Figure 2

Examples of environmental risks and opportunities found in the Ministry of Defence's work

Our audit has identified a variety of risks and opportunities the Ministry of Defence (the Department) must manage. It is addressing some, including by initiating discussions with other departments

Area	Risks	Opportunities
Performance against government targets	Using a narrow focus on Greening Government Commitment targets means the full impact of the Department's environmental impacts are not captured in performance measurement (paragraph 6).	<p>The scale of its land holdings means the Department has the potential to contribute widely to the government's 25-Year Environment Plan goals (paragraph 1.7).</p> <p>The size and scale of its activities mean improving the Department's environmental sustainability could have an impact unparalleled in government – particularly in reducing greenhouse gas emissions (paragraph 5).</p>
Stewardship of nationally important Sites of Special Scientific Interest	Lack of systematic monitoring of Sites of Special Scientific Interest, in the absence of Natural England's monitoring, risks deterioration in site condition (paragraph 1.7).	<p>Highlight good practice to other major landowners and lead by example on conservation issues in government (paragraphs 2.13 and 4.15).</p> <p>Good site stewardship contributes to meeting the government's 25-Year Environment Plan (paragraph 1.7).</p>
Sustainability in infrastructure projects	<p>Budget constraints prevent necessary improvements to the defence estate (paragraph 2.6).</p> <p>The Department is not doing enough to build sustainability into its estate (paragraphs 9 and 14).</p>	<p>Invest to improve the defence estate's energy efficiency by embedding low-carbon and other sustainable technologies and make sites more climate-resilient (paragraph 9).</p> <p>Secure future savings on utilities (paragraph 2.5).</p>
Sustainable procurement	<p>The long working life of defence equipment ties the Department to the equipment's associated greenhouse gas emissions for decades, making it difficult to meet net zero emissions targets (paragraph 3.8).</p> <p>It is unclear whether the Department complies with sustainable procurement standards across the board (paragraph 12).</p>	<p>Influence the defence supply chain to move towards more sustainable defence technology (paragraphs 1.9 and 3.10).</p> <p>Reduce both costs and environmental damage through fuel-efficient design of military equipment (paragraphs 3.5 to 3.9).</p>
Policy and governance	<p>Lack of focus on environmental sustainability at senior levels (paragraphs 14, 16 and 4.7 to 4.10).</p> <p>Disproportionate focus on compliance detracts from other positive contributions to environmental sustainability (paragraph 13).</p>	<p>Ensuring compliance with environmental protection legislation maintains the military's licence to operate in the UK and overseas (paragraph 4.12).</p> <p>A commitment to sustainability could increase the attractiveness of the Department as an employer (paragraph 4.15).</p>

Note

1 The 25-Year Environment Plan goals are set out in *A Green Future: Our 25 Year Plan to Improve the Environment* (2018).

Source: National Audit Office summary of our analysis contained in this report (*Ministry of Defence Environmental Sustainability Overview*)

Part One

The environmental significance of the Ministry of Defence

1.1 This part of the report explains why the Ministry of Defence (the Department) is critical to meeting the government's sustainability targets and obligations.

The Department's impact on the environment

1.2 The Department's £38 billion expenditure is the third largest in government. Its expenditure with suppliers represents more than 40% of all government procurement spend. The nature of its work, and the scale of land, buildings, equipment and supplies it uses, means that, although the Department does not have an environmental role, it has significant impacts upon the environment (**Figure 3**).

The Department's contribution to the government's environmental targets

Greening Government Commitments

1.3 In 2011 the government set targets to reduce central departments' environmental impact. These Greening Government Commitments (GGCs) are the main metric by which government measures departmental sustainability and are a significant part of the Department's own monitoring. The Department's size and level of activity (which includes activities on the Department's overseas estate) mean that it is the single biggest contributor to the government's totals across all the metrics except domestic flights. For example, it was responsible for 50% of the total greenhouse gas emissions reported by central government in 2017-18 (**Figure 4** on page 14). Overall GGC performance is discussed in paragraph 2.4.

Figure 3

Examples of where the scale and nature of the Ministry of Defence affect the environment

The Ministry of Defence (the Department) has significant environmental impacts because of the nature of its work, and the scale of land, buildings, equipment and supplies it uses

The built estate

- Includes more than 115,000 separate buildings.
- Covers about 30 million square metres.
- Includes approximately 50,000 houses.
- Almost 50% of the Department's buildings are more than 50 years old.
- Only 25% of the buildings more than 50 years old have been refurbished within the past 50 years.

Land

- The Department owns or otherwise controls approximately 1% of the UK's land mass and has access rights for a further 0.8%.
- Over one-third (38%) of the defence estate is designated as a Site of Special Scientific Interest (SSSI) (3.5% of all SSSIs in Great Britain).
- The Department manages 200,000 hectares of land overseas.

Equipment and supplies

- The Department has a budget of £181 billion to spend on equipment and support from 2019-20 to 2028-29.
- The non-military vehicle fleet consists of almost 16,500 cars, vans, trucks and specialist vehicles.

People

- The Department employs more than 200,000 people, including around 160,000 military personnel.

Military operations

- Front-line Commands used 666 million litres of fuel in 2018-19, equating to 1.8 million tonnes of carbon equivalent greenhouse gas emissions (approximately equivalent to emissions from 200,000 homes for a year).
- Military operations provide support to civil authorities in response to environmental crises.

Legacy issues¹

- A hazardous legacy has arisen from historical dumping of ordnance at sea.
- There is no current ability to defuel nuclear submarines.²

Notes

- ¹ Discussion of these issues is outside the scope of this study.
- ² Comptroller and Auditor General, *Investigation into submarine defueling and dismantling*, Session 2017–2019, HC 2102, National Audit Office, April 2019.

Source: National Audit Office review of published information

Figure 4

The Ministry of Defence's significance in meeting the Greening Government Commitments targets to 2020

The Ministry of Defence (the Department) is responsible for a high proportion of the environmental impacts measured through the Greening Government Commitments (GGCs)

Area of GGCs	Proportion of total government GGC impact attributable to the Department (2017-18)	Proportion of the government's reduction from 2009-10 to 2017-18 attributable to the Department
	(%)	(%)
Water use	66	58
Waste	56	56
Greenhouse gas emissions	50	41
Paper use	27	7
Domestic flights	20	11

Notes

1 Whole-of-government figures for 2018-19 are not yet available.

2 GGC targets relating to procurement and transparency are unquantified.

Source: National Audit Office analysis of *Greening Government Commitments Annual Report 2017-18*

Beyond the Greening Government Commitments

1.4 The GGCs are the only environmental targets imposed on all departments, consistently measured and reported centrally. However, these targets do not capture the full range of the Department's activities which affect the environment. For example:

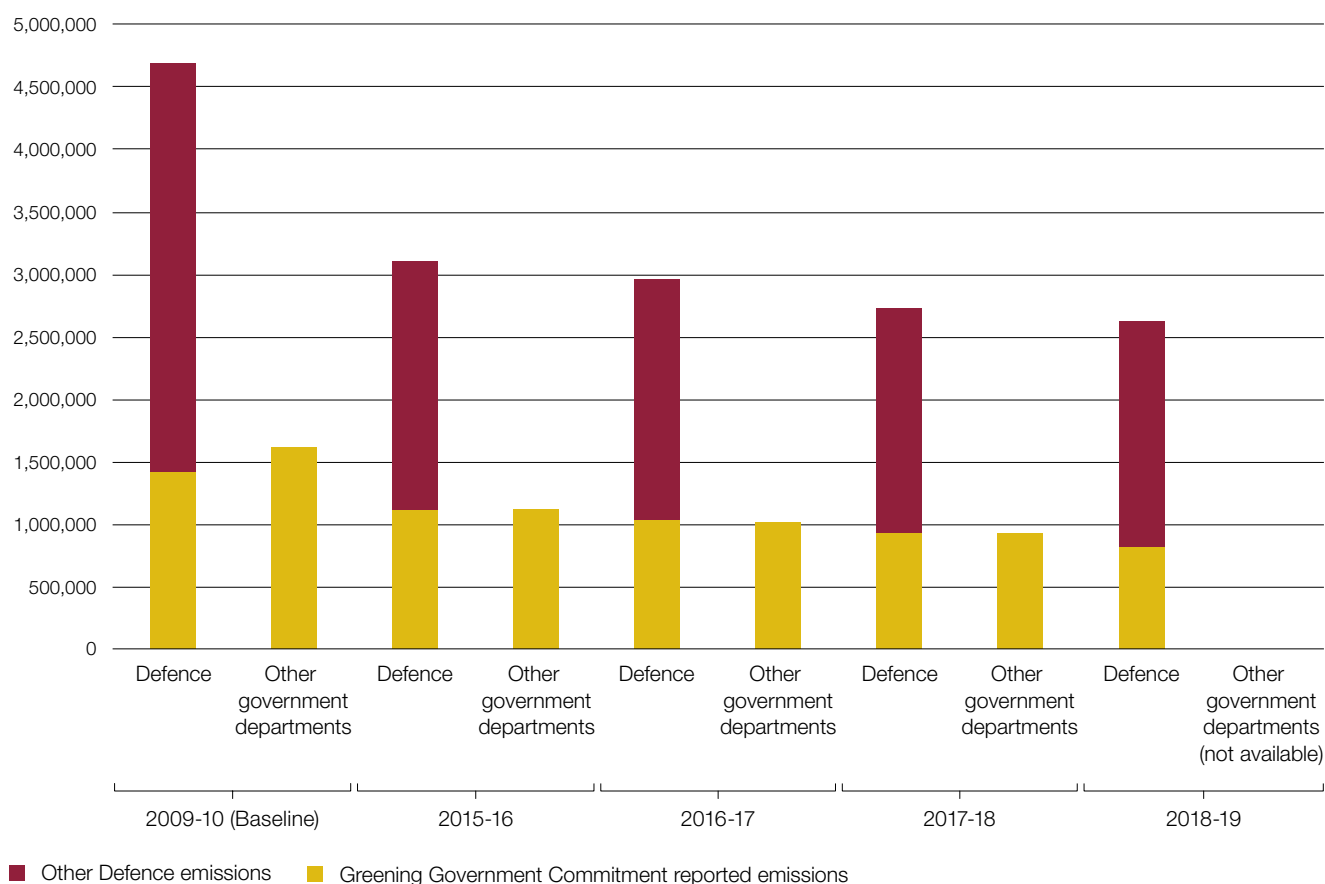
- the GGC metrics are mostly applicable to the built estate and administrative operations. They do not cover other environmental risks of specific importance to the Department, such as the impact of its land use on maintaining biodiversity;
- between 10% and 25% of the Department's sites are out of scope of the GGCs; and
- significant sources of greenhouse gas emissions are out of scope of the GGCs (**Figure 5**). For example, in 2018-19, there were more than twice as many greenhouse gas emissions associated with defence equipment fuel (including for land vehicles, aircraft and navy vessels) than reported under the GGCs.

Figure 5

The Ministry of Defence's greenhouse gas emissions, 2015-16 to 2018-19, and 2009-10 baseline

In 2017-18 the Ministry of Defence's (the Department's) Greening Government Commitment (GGC) reported emissions, which are less than half of the Department's total emissions, were slightly higher than for the rest of government combined

Carbon equivalent emissions (tCO₂e)



Greenhouse gas emissions (Tonnes of carbon dioxide equivalent)

	2009-10 (baseline)	2015-16	2016-17	2017-18	2018-19
Defence GGC emissions	1,432,006	1,113,909	1,043,131	942,283	827,822
Other defence emissions	3,264,000	1,987,572	1,922,761	1,785,081	1,805,476
Defence total	4,696,006	3,101,481	2,965,892	2,727,364	2,633,298
Other government departments' GGC emissions	1,620,547	1,116,138	1,013,833	926,027	Not available

Notes

- GGC-reported emissions cover government departments' estates and vehicle use. Other defence emissions cover defence activity out of GGC scope, such as fuel use as part of defence operations.
- The 2009-10 figure for 'other defence emissions' has not been adjusted for any changes to emissions calculation methodology that may have taken place in recent years.
- The Department's GGC-reported emissions for 2018-19 are based on provisional data held by the Department. No 2018-19 data are yet available for the whole of government.
- Figures may not sum due to rounding.

Source: Greening Government Commitments annual reports and National Audit Office analysis of Ministry of Defence data

1.5 The Department risks missing opportunities to improve its environmental sustainability because of its reliance on the narrowly scoped GGCs to monitor its high-level progress. For example, although greenhouse gas emissions measured by the GGCs have reduced by 26% between 2015-16 and 2018-19, emissions from defence equipment fuel use have only reduced by 9% in the same period (Figure 5). While the Department's priority is to meet operational objectives, it acknowledges that improving the fuel efficiency of defence equipment holds great potential for reducing both costs and the Department's overall greenhouse gas emissions. It has set a target for a 10% reduction in fuel use by 2025-26 against a 2015-16 baseline.

1.6 In 2018-19, the Department, in line with central government guidance, began incorporating reporting of its sustainability performance into its Annual Report and Accounts. Prior to this it published a separate sustainability report, which provided an overview of the Department's progress against both its own sustainability requirements and the GGC targets. Discussion of key strategies and the approach to delivery is now limited to changes from the previous year, and there is less detail on planned future improvements. The Department does, however, produce an annual sustainability magazine, *Sanctuary*, that showcases conservation work on the estate.¹

The Department's significance to the government's wider environmental objectives

1.7 Other government plans aimed at environmental protection do not yet have targets set at a departmental level. Nevertheless, the Department will play a crucial role in meeting their aims and, in some instances, is already working towards them. For example:

- the 17 UN Sustainable Development Goals (2015–2030) relate to both the environment and other sustainability goals, such as alleviating poverty. While the Department does not take the lead on the UK's response to any of the goals, its annual reports highlight work to support several of them, and it has started a review of its sustainability strategy to strengthen the links with the UN Goals; and
- *A Green Future: Our 25 Year Plan to Improve the Environment* sets out the government's environmental goals.² Given the scale of its land holdings, the Department has potential to contribute widely to these goals along the lines of its existing contribution to biodiversity through habitat preservation on Salisbury Plain.

¹ Available at: www.gov.uk/government/publications/sanctuary

² HM Government, *A Green Future: Our 25 Year Plan to Improve the Environment*, January 2018. Available at: www.gov.uk/government/publications/25-year-environment-plan

Implications of the government's net zero emissions target for the Department

1.8 In June 2019, government legislation committed the UK to reaching net zero greenhouse gas emissions by 2050. The Department told us this will have significant implications for defence, which it plans to examine in the Integrated Security, Defence and Foreign Policy Review (Integrated Review). The government has not yet decided whether the Department will be required to be carbon-neutral in its own right, or if it will be allowed to offset residual emissions against carbon sinks elsewhere. Both scenarios will require the Department to make major changes to its equipment and estate. Almost all its vehicles, ships, aircraft and equipment, for instance, rely on fossil fuels, and some of the largest are likely to still be in use in 2050. The Department has a target to reduce its built estate by 30% by 2040. However, significant further action will be necessary to reduce the emissions of the remaining estate.

1.9 The size of the Department's estate, and the significance of its supply chain, means there are considerable opportunities for it to support net zero emissions in a proactive way. Potential initiatives, where compatible with defence activities, could include:

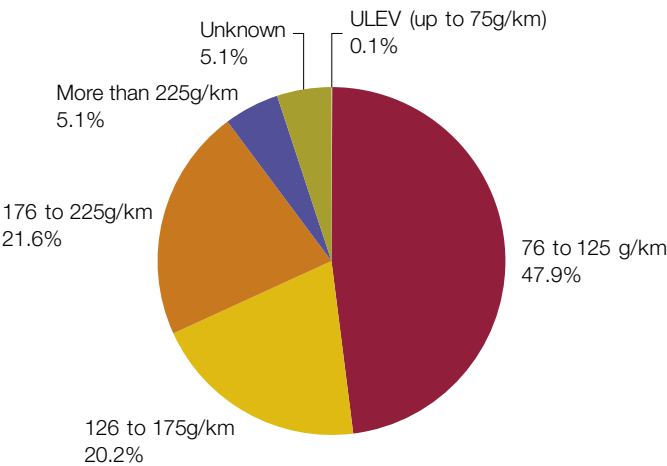
- using areas of Departmental land for carbon sequestration through tree planting, or to support renewable energy production;
- using the Department's built estate to trial energy efficiency initiatives for subsequent roll-out across the country; and
- leveraging its influence on its supply chain to promote improvements in the wider economy.

Reducing emissions in the non-military vehicle fleet

1.10 The government's Road to Zero Strategy sets an ambition for 25% of the government car fleet to be ultra-low-emission vehicles (ULEVs) by 2022, and 100% by 2030. The Department's contractor-managed non-military vehicle fleet includes almost 16,500 cars, vans, trucks and specialist vehicles, with an approximate UK mileage of 181 million miles per year. Only a small proportion of the Department's vehicles are low emission (**Figure 6** overleaf). The Department estimates that meeting the government's target will require the procurement of 1,700 ULEVs by December 2022, equivalent to 2.7% of all ULEVs registered in the UK in 2018. The Department currently operates 12 ULEVs, of which 10 are electric vehicles. A plan to increase this to 100 vehicles by December 2019 was unable to secure internal funding. The Department has allocated funding, and placed orders for, 405 ULEVs for delivery between May and December 2020. This includes 227 battery electric vehicles and 178 plug-in hybrid electric vehicles, and the necessary charging point infrastructure.

Figure 6
Carbon dioxide equivalent emissions per vehicle of the Ministry of Defence’s non-military fleet (August 2019)

Almost half of the Ministry of Defence’s (the Department’s) non-military fleet has CO₂e emissions less than 125 grams per kilometre (g/km). However, very few ultra-low-emission vehicles (ULEVs) have been procured



- Notes**
- 1 A vehicle is currently classified as ULEV if it has CO₂ equivalent emissions of less than 75g/km. This includes electric vehicles. The only ULEVs procured were 11 in 2017 and two in 2018, of which 12 are still in use (two hybrid vehicles and 10 electric). By 2022, the government expects a ULEV to be defined as a car that emits less than 50g/km.
 - 2 Figures as at August 2019 – further procurement has taken place since.
 - 3 In addition to the 16,333 powered vehicles included in the above chart, the Department procured 553 non-powered vehicles, such as trailers, through the non-military vehicle contract, which are not included.

Source: National Audit Office analysis of Ministry of Defence vehicle fleet data

Part Two

Estates and infrastructure

2.1 This part of the report examines the Ministry of Defence's (the Department's) approach to managing its estate. It focuses on the role of the Defence Infrastructure Organisation (DIO) and covers:

- responsibility for environmental sustainability and protection across the defence estate;
- the Department's performance against the Greening Government Commitments (GGCs), in particular greenhouse gas emissions, through its use of the built estate;
- increasing the energy efficiency of the built estate through infrastructure projects and the Defence Related Environmental Assessment Methodology (DREAM); and
- management of the environmentally important sites on the training estate.

The responsibilities of the front-line Commands (the Army, Navy, Air and Strategic Command) for management of the estate are covered in more detail in Part Four.

Responsibility for environmental sustainability and protection across the defence estate

2.2 In 2011, the Department established DIO to manage the defence estate centrally (**Figure 7** overleaf). It is responsible for providing an estate that meets the Commands' requirements, including by:

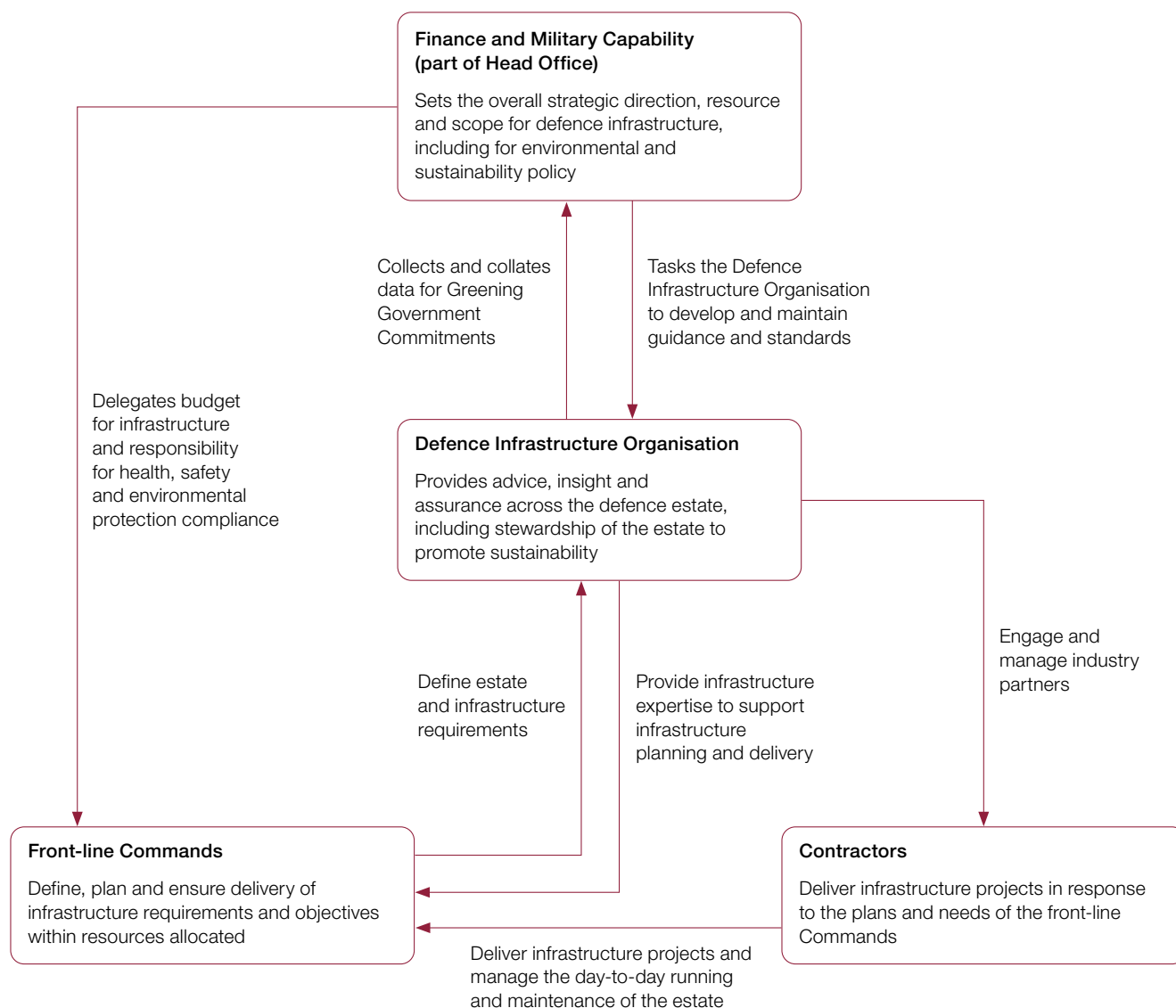
- managing and delivering infrastructure projects;
- providing subject matter expertise on infrastructure and sustainability; and
- providing technical guidance.

2.3 Commands run individual sites and are accountable for complying with the environmental and sustainability standards set by Head Office. Commands and contractors must develop and maintain site Environmental Management Systems with input from DIO. This provides a systematic approach to embedding environmental principles across the Department's sites and activities, consistent with environmental audit standards, and provides guidance and sets out the objectives that must be met on the defence estate.

Figure 7

Responsibilities for the management of the Ministry of Defence estate

The Defence Infrastructure Organisation plays an important role in making the defence estate more sustainable



Source: National Audit Office analysis of Ministry of Defence information

The Department's built estate and the Greening Government Commitments

2.4 The GGCs were introduced in 2011-12 but they have only been included in the annual Defence Plan (which sets out how the Department will meet its high-level objectives) since 2018. The Department's performance against the GGC targets has been mixed. In 2017-18, the most recent year for which government-wide GGC results are available, the Department made reductions against most of the targets, although the reductions lag behind the government average (**Figure 8** overleaf). The Department's size and level of activity mean it is the single biggest contributor to the government's reductions in emissions, waste production and water use in absolute terms (Figure 4).³ However, most other departments have made larger reductions in percentage terms.

Greenhouse gas emissions

2.5 The Department achieved its 2020 GGC greenhouse gas emissions reduction target early, having reduced emissions from its estate and domestic business travel by 42% since 2009-10, against a 39.9% target. We estimate that at least 11% of the reduction is due to site disposals as part of the Department's programme to improve overall efficiency on the estate, and up to 40% due to improvements in emissions from the national grid. Military sites are often isolated and require their own power generation, meaning a smaller proportion of the Department's energy generation is supplied by the national grid. The Department's energy mix is one-third grid electricity and two-thirds gas or oil, and this proportion has not changed significantly since the introduction of the GGCs. Therefore, there could be significant opportunities for the Department to further reduce its emissions through adjustments to its energy mix, such as through increased use of solar panels. The Department does not have a target for the proportion of energy to be delivered from renewable sources. The Department's estates rationalisation programme, which aims to reduce the built estate by 30% by 2040, will also contribute further to reductions in the defence estate's carbon emissions.

Energy efficiency infrastructure projects

2.6 The Department recognises the need to improve the energy efficiency of the built estate both to meet greenhouse gas emission commitments and to make cost savings. More than 40% of the Department's estate is over half a century old, but its ability to improve energy efficiency and wider sustainability through refurbishment is limited by financial constraints. In 2009, in response to financial pressure, the Department reduced its maintenance levels to those necessary to provide a safe and legal estate. Since then, the Department recognises that it has continued to prioritise this objective over increasing the energy efficiency of the estate.

³ The majority of GGC-reported emissions result from the defence estate, but also include emissions from non-military vehicles (see paragraph 1.10).

Figure 8

The Ministry of Defence's performance against the Greening Government Commitments

The Ministry of Defence (the Department) has a mixed record of meeting Greening Government Commitment (GGC) targets

	GGC target by 2019-20	Ministry of Defence performance 2017-18	Government average performance 2017-18	Ministry of Defence performance 2018-19
Greenhouse gas emissions	Ministry of Defence-specific target 39.9% (43% reduction on average across government)	34% decrease	39% decrease	42% decrease
Waste				
● reduction compared with 2009-10	Reducing the overall amount of waste	40% decrease	40% decrease	40% decrease
● to landfill	To less than 10%	14% to landfill	13% to landfill	8% to landfill
● recycled	To increase the proportion which is recycled	56% recycled	60% recycled	54% recycled
Paper	50% reduction	24% decrease	50% decrease	33% decrease
Domestic flights	30% reduction	18% decrease	28% decrease	21% decrease
Water use	Reduction (internal target 15%)	9% decrease	10% decrease	10% decrease

Notes

- Figures highlighted in red indicate where the Department had achieved its target by 2018-19.
- Departments are individually assessed on progress against GGC targets, including being set an individual target for greenhouse gas emissions. The individual target for the Ministry of Defence was originally set at 30%, but the Department agreed a higher target of 39.9% in 2016.
- The results for 2018-19 are from Departmental internal data, as the 2018-19 GGC report has not yet been published. The Department has published performance for 2018-19 in its annual report. However, the published waste figures are incorrect as construction waste was included.
- Additional GGCs, for procurement and transparency, are unquantified and not included above.
- The GGCs do not specify a target for reduction in water use. However the Department has set an internal target of 15%.

Source: National Audit Office analysis of *Greening Government Commitments Annual Report April 2017 to March 2018*, and Ministry of Defence annual report and accounts for 2018-19 and internal figures on waste production

2.7 The Department has an internal target to reduce energy consumption by 10% between 2017-18 and 2025-26. It is undertaking several infrastructure initiatives which seek to address the estate's energy efficiency. These are at an early stage and it is not yet possible to judge their effectiveness, scalability and cost savings.

2.8 Departmental guidance requires that sustainability appraisals be completed for all estate-related plans, programmes and decisions. Infrastructure project managers are additionally required to ensure an assessment is carried out for new-build and major refurbishment projects using the Department's bespoke environmental assessment methodology (DREAM). The Department expects all new builds to achieve an 'excellent' DREAM rating, and all major refurbishment projects to achieve a 'very good' rating, unless this requirement conflicts with the obligation to achieve value for money. In 2018-19, 96% of construction projects self-reported meeting this target rating. By comparison, in 2017 we found the Ministry of Justice had met the independently assessed Building Research Establishment Environmental Assessment Method (BREEAM) construction targets (which the Department sees as equivalent) in 40 out of 54 cases (74%).⁴ The DREAM approach means that a wide range of potential sustainability benefits can be considered. However, the way 'credits' are distributed means that designs that improve the environment, rather than simply reducing impacts, are not necessary to meet the target rating. For example, only 38% of the Department's new-build construction and major refurbishment projects had low- or zero-carbon technologies specified during design.

Environmental stewardship

2.9 The Department's estate includes nationally and internationally important sites of environmental and cultural value. This includes 169 Sites of Special Scientific Interest (SSSIs), mostly on the training estate, representing 3.5% of all SSSIs in Great Britain.⁵ Many of these sites are in England, where the Department owns 7% of all SSSIs. They can therefore make a significant contribution towards SSSI condition targets for England as a whole, set in the Biodiversity 2020 strategy.⁶ SSSIs cover 38% of the Department's estate, a higher proportion even than major landowners such as the National Trust. An example of the significance of the Department to SSSI land management can be seen around Salisbury Plain, where the Department is responsible for most of the local SSSIs (**Figure 9** overleaf).

2.10 DIO and its commercial partners develop management plans for sites with significant 'green spaces' to help protect designated conservation sites, and to comply with legislation such as the Wildlife and Countryside Act. These cover 93% of SSSIs on the defence estate. These plans are designed to address environmental protection needs, while also allowing military activities to occur on site (**Figure 10** on page 25).

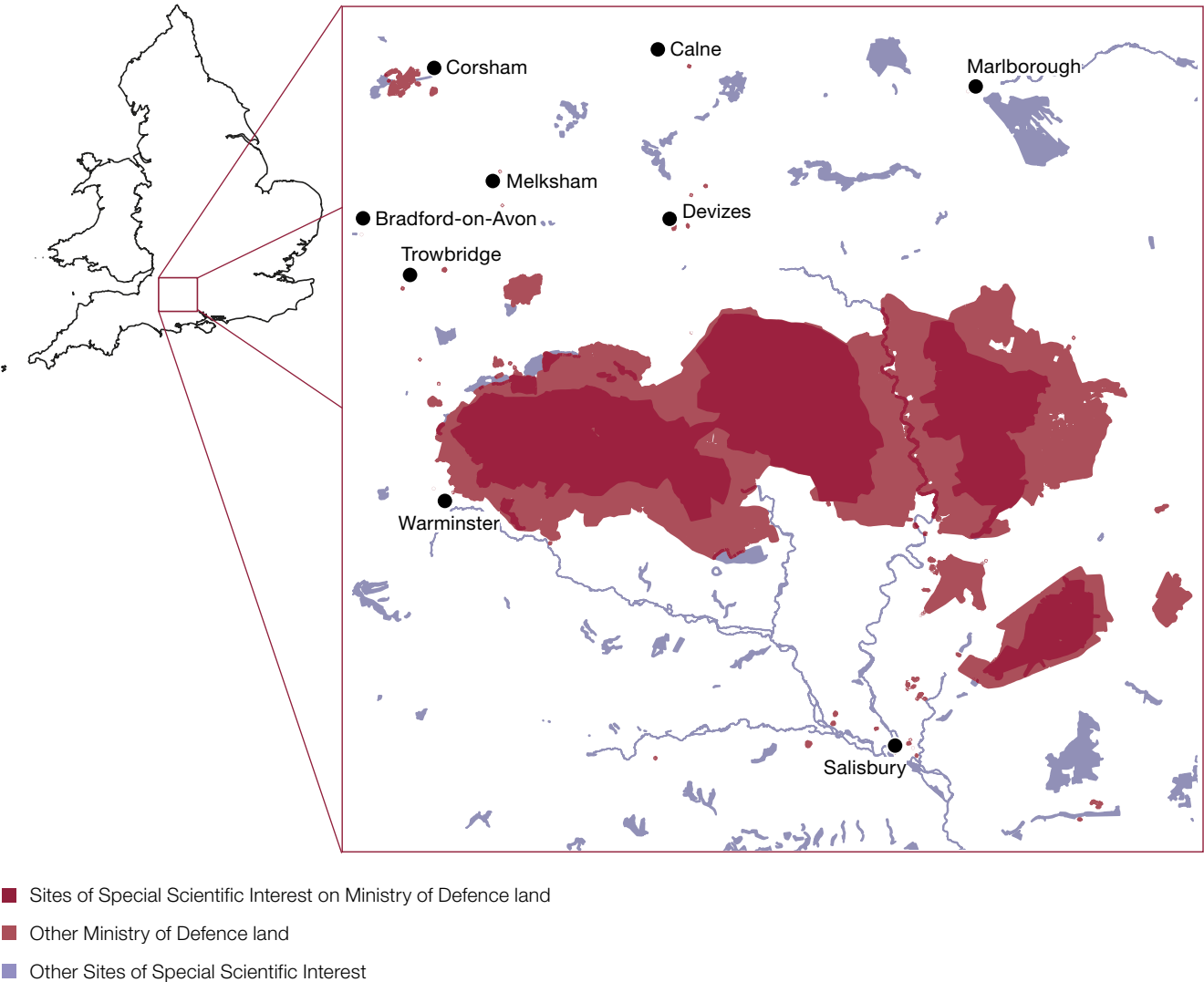
⁴ Comptroller and Auditor General, *Ministry of Justice, Environmental sustainability overview 2017*, National Audit Office, November 2017. Available at: www.nao.org.uk/report/ministry-of-justice-environmental-sustainability-overview-2017/

⁵ SSSIs are specially designated conservation areas which give legal protection to rare flora or fauna, or which have specific geological features.

⁶ Department for Environment, Food & Rural Affairs, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, 2011.

Figure 9
Sites of Special Scientific Interest on Ministry of Defence land on Salisbury Plain

Most of the Sites of Special Scientific Interest near Salisbury Plain are the responsibility of the Ministry of Defence (the Department). They cover a significant proportion of the Department's land in the area



Source: National Audit Office analysis of Ministry of Defence and Natural England data

Figure 10

Examples of ways the Ministry of Defence manages its training estate at Salisbury Plain to protect the land from environmental damage

Ministry of Defence ecologists and military Command work together to minimise damage to the land and habitats from training activity on Salisbury Plain



The Ministry of Defence (the Department) applies a score to each training activity based on the number and type of vehicles to be used, and the planned activity. This system is used to restrict the amount of potentially damaging activity taking place in each part of the Plain. Vehicles are also instructed to remain on the established tracks as far as possible.

← Temporary target placement used in live firing exercise to reduce need for digging on Salisbury Plain.



Additional restrictions are placed on activities when wet weather is likely to result in greater damage to the ground and particularly sensitive areas are marked as out of bounds.

← Removal of turf as part of training exercise preparation, allowing for subsequent restoration.



Approval for digging is given based on assessments of archaeological sites and Sites of Special Scientific Interest in the area. Trenches are excavated such that the ground can be restored after use: topsoil and turf are removed first, then the chalk beneath. On sites where trenches have been dug no further digging is permitted for three years.

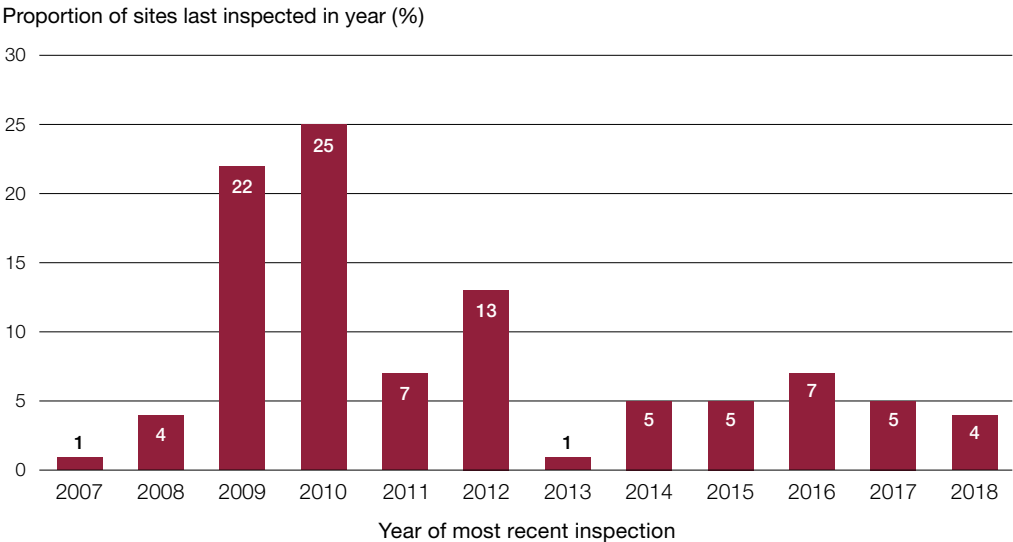
← Site of a trench used in live firing training exercise and subsequently restored, six months after restoration.

Source: Ministry of Defence

2.11 The Department has a statutory duty to manage and protect SSSIs. In the UK, each nation has a statutory body responsible for monitoring and reporting the condition of SSSIs. However, the statutory body in England – Natural England – has reduced its level of monitoring below a previously agreed minimum level of once within a six-year cycle. As a result, just over half of the Department’s SSSI units in England have not been assessed since before 2011 (**Figure 11**).⁷ A similar reduction in inspections has taken place in Scotland.⁸

Figure 11
Years in which the Ministry of Defence’s English Site of Special Scientific Interest units were most recently inspected

Less than half (47%) of the Ministry of Defence’s (the Department’s) Site of Special Scientific Interest (SSSI) units have been assessed for condition by Natural England since 2010



- Notes**
- 1 Natural England is the statutory conservation body which is responsible for assessing the condition of SSSIs in England.
 - 2 SSSI units are divisions of SSSIs used to record management and condition details. The Department is responsible for 740 units across 127 sites in England.
 - 3 Data relating to inspections in 2019 were unavailable.
 - 4 Figures in chart have been rounded to the nearest whole percentage point.
 - 5 Seven units (1% of the total) were last inspected in 2005 or 2006, and are not included in the chart.

Source: National Audit Office analysis of Ministry of Defence data

⁷ Natural England defines SSSI units as sub-divisions of SSSIs used to record management and condition details.
⁸ There are insufficient data on the most recent inspection dates to confirm if this is also occurring in Wales or Northern Ireland.

2.12 In October 2019 the UK statutory bodies agreed new common standards which recognised that there has been a reduction in resources available for protected area monitoring and removed the expectation that sites would be assessed every six years. Natural England now expects landowners such as the Department to undertake assurance activity and assist with site condition monitoring where appropriate knowledge and resources are available. However, the Department does not carry out its own detailed site condition surveys and told us it is concerned about the resource implications of doing so in the absence of regular assessments by Natural England. These concerns have been raised by the Department at meetings with Natural England.

2.13 In 2011, the government set targets for 50% of SSSIs in England to be in a ‘favourable’ condition by 2020, and 95% to be classed as ‘favourable’ or ‘unfavourable – recovering’. The most recent Natural England assessments show that 48% of the Department’s English SSSIs are currently in a favourable condition, and 99% in either a ‘favourable’ or ‘unfavourable – recovering’ condition.⁹ These results are better than both the England average and the average for Natural England’s ‘Major Landowners’ Group’ (**Figure 12**).

Figure 12
The condition of the Ministry of Defence’s Sites of Special Scientific Interest in England in 2019

The condition of the Ministry of Defence’s Sites of Special Scientific Interest (SSSIs) is better than the average of both the Major Landowners’ Group and English sites as a whole

	Ministry of Defence (%)	Major Landowners’ Group average (%)	Average in England (%)
Percentage of SSSIs in a ‘favourable’ condition	48	44	39
Percentage of SSSIs that are either ‘favourable’ or ‘unfavourable – recovering’	99	94	93

Notes

1 In its latest biodiversity strategy for England, published in 2011, government set targets for 50% of SSSIs to be in a ‘favourable’ condition by 2020, and 95% to be classed as ‘favourable’ or ‘unfavourable – recovering’.

2 Natural England’s Major Landowners’ Group contains organisations who own and manage significant parts of the SSSI estate in England, including the Ministry of Defence.

Source: National Audit Office analysis of Ministry of Defence data

9 Natural England categorises the condition of SSSIs as one of the following:

- favourable – habitats and features are in a healthy state and are being conserved by appropriate management;
- unfavourable (recovering condition) – if current management measures are sustained the site will recover over time;
- unfavourable (no change) or unfavourable (declining condition) – special features are not being conserved or are being lost, so without appropriate management the site will never reach a favourable or recovering condition; and
- part destroyed or destroyed – there has been fundamental damage, where special features have been permanently lost and favourable condition cannot be achieved.

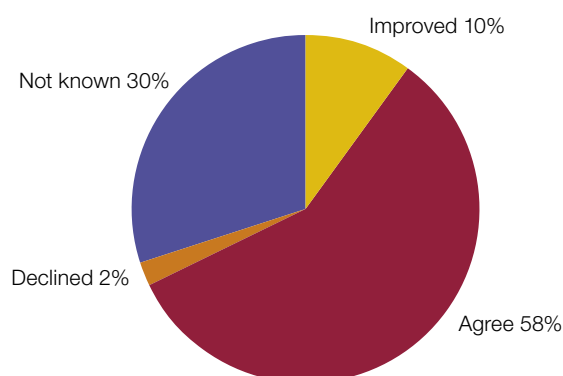
2.14 The official condition status of a SSSI may only be changed by a Natural England assessment. This means that the latest reported condition statuses may not reflect the current condition, affecting the Department's ability to meet the 2020 target. The Department obtains informal assurance over the condition of its SSSIs through the work of its ecologists, and in late 2019 carried out an exercise to collect ecologists' views on whether existing condition assessments are accurate. The exercise found that, of SSSI units in England, DIO ecologists believe almost 70% of sites are in the same condition, or better, than recorded by Natural England, but they were uncertain about the current status in one-third of cases (**Figure 13**). Only 54% of units were judged to have appropriate conservation measures in place. The Department's ecologists judged that 10% of sites did not have appropriate measures in place, and were unable to judge with confidence whether the work being undertaken at the site would meet the requirements of a Natural England assessment in 35% of cases (**Figure 14**).

Figure 13

The Ministry of Defence's assessment of whether the most recent Natural England assessment of its Sites of Special Scientific Interest in England remains accurate

The Ministry of Defence (the Department) agrees with only 58% of the current condition assessments recorded by Natural England for the Sites of Special Scientific Interest (SSSIs) it is responsible for

"Do you agree with the latest condition assessment for this unit/feature?"



Note

- 1 The Departmental ecologist responsible for each SSSI unit was asked "Do you agree with the latest condition assessment for this unit/feature?" and responded either:
 - 'Agree', indicating they agreed with Natural England's assessment of unit condition;
 - 'Improved', indicating they believe the unit condition was better than that recorded by Natural England;
 - 'Declined', indicating they believe the unit condition had deteriorated from that recorded by Natural England; or
 - 'Not known', indicating they were unsure what condition assessment would be awarded if a Natural England assessment were carried out.

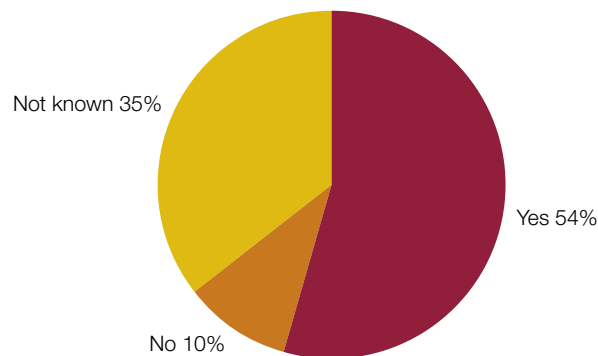
Source: National Audit Office analysis of Ministry of Defence data

Figure 14

The Ministry of Defence's assessment of whether appropriate conservation management measures are in place for its Sites of Special Scientific Interest in England

The Ministry of Defence (the Department) does not know whether appropriate conservation management measures are in place in 35% of the Sites of Special Scientific Interest (SSSI) units it is responsible for

"Are all appropriate conservation management measures in place?"

**Notes**

- 1 The Departmental ecologist responsible for each SSSI unit was asked "Are all appropriate conservation management measures in place?" and answered 'yes', 'no', or 'not known'.
- 2 'Not known' includes both units where the responsible ecologist answered 'not known' and units where this specific question had not been answered, but other parts of the exercise had been completed.
- 3 Segment totals do not sum due to rounding.

Source: National Audit Office analysis of Ministry of Defence data

2.15 The incomplete data make it more difficult for the Department to be confident it is targeting improvement works where they are most needed. For example, despite the positive conservation activity taking place on Salisbury Plain, the Department's ecologists could only be confident that the existing assessment score by Natural England was accurate for around 40% of SSSI units on the Plain. It was, however, more confident that appropriate conservation measures were in place, reporting that this was the case for more than 80% of units. There are currently no plans to carry out a similar exercise for the rest of the UK. The Department has raised the issue of outdated site conditions with other regulatory bodies and is working with them to identify a solution.

2.16 DIO delivers a national plan for managing and improving SSSIs through its Conservation Stewardship Fund. The Fund, which has a total budget of around £2.9 million for 2019-20, supports conservation of natural and heritage sites on the defence estate. Of this, £1.2 million (41%) is dedicated to SSSI maintenance and improvement work. In 2018-19 this funding supported 167 projects at 70 SSSIs and included work such as maintaining heathland. In addition to this funding, the Department's farm tenants and licensees are able to access financial support for maintaining and improving SSSIs from the Department for Environment, Food & Rural Affairs' agri-environment schemes.

2.17 We looked at whether the Department was focusing its efforts on the SSSI units in unfavourable condition. We found that one-fifth of the units previously assessed by Natural England as being in unfavourable condition had no improvement plan, and that in only around 10% of cases was this because their condition had improved in the meantime. The longer a SSSI remains in an unfavourable condition, the more difficult it will be, in general, to return it to a favourable condition.

Part Three

Procurement and supply chain

3.1 This part of the report examines the Ministry of Defence's (the Department's) approach to promoting sustainability in procurement. It covers:

- the role and responsibilities of Defence Equipment and Support (DE&S);
- management of environmental impacts in procurement projects; and
- management of environmental impacts in the supply chain.

The focus of this part of our audit has been on equipment procurement. The Department also carries out procurement activities in areas such as the defence estate and digital projects.

Defence Equipment and Support

3.2 DE&S, an arm's-length body of the Department, is responsible for delivering the equipment and logistics needed to support the objectives of the UK's armed forces. It is involved in most of the Department's equipment procurement.¹⁰ Procurement needs and budgets are set by the Commands, with the subsequent delivery projects managed by DE&S teams.

3.3 DE&S produces guidance for its staff working on procurement projects and provides support and advice to the Commands on how to deliver environmental improvements during training and operations. The *Secretary of State for Defence policy statement on health, safety and environmental protection* does not place any specific duties on DE&S, but it does require Departmental staff to: minimise adverse effects on the environment; comply with all applicable health, safety and environmental protection legislation including overseas; and protect the environment.¹¹

¹⁰ Some specialist procurement is carried out by bespoke delivery bodies, most notably the Submarine Delivery Agency. The approach taken by this body is not examined in this overview. However it is understood to be informed by the processes within DE&S.

¹¹ Ministry of Defence, *Secretary of State for Defence policy statement on health, safety and environmental protection*, April 2020, available online at: www.gov.uk/government/publications/secretary-of-states-policy-statement-on-safety-health-environmental-protection-and-sustainable-development

Management of environmental impacts in procurement projects

3.4 DE&S requires all acquisition projects to make use of specific guidance, plans and processes to manage environmental risks at all stages of the project, using the Project Oriented Environmental Management System (POEMS) (**Figure 15**).

3.5 The requirements and associated guidance provided through POEMS goes beyond what we have seen in other departments. The percentage of equipment projects where the end user has agreed to implement controls to manage residual environmental impacts identified in the DE&S assessment is reported quarterly to the DE&S Executive Committee. Compliance in 2019 was 89%, varying by project type between 98% for land projects to 33% for air projects (since the Department's internal regulators do not set specific requirements for air projects).

3.6 The data collected confirm activity is taking place, and gives some assurance over actions resulting from this activity, but does not assess whether the assessments are of sufficient quality to support the design and implementation of appropriate protection measures. The Department told us that compliance with POEMS was last audited when the guidance was updated in January 2017, in order to allow teams time to implement the necessary changes to their projects. A new audit is now ongoing and expected to be completed by the end of June 2020, having been originally planned to be completed by the end of 2019.

3.7 Since equipment may be in service for decades, failure to build in sustainability and understand the overall impacts of currently committed projects will limit the Department's ability to meet the government's 2050 net zero emissions targets. We examined four major procurement projects, in order to understand how the POEMS guidance is applied, and to determine whether the approach can support a cumulative assessment of procurement impacts.¹² For individual projects, we found that the assessment of environmental risks and impacts varied significantly between Commands and projects, for example in their approach to assessing and managing environmental risks. Despite these differences, all the projects considered a wide range of environmental risks and impacts across the expected life cycle of the procured equipment and identified appropriate mitigations for these, in accordance with the POEMS approach.

3.8 Despite the efforts of the relevant project teams, we identified several limitations in the environmental assessments of these projects:

- Two of the projects involved existing joint procurements with other NATO members, limiting the opportunities for the Department to specify bespoke mitigations for risks.
- None of the projects we sampled attempted to quantify their impacts. For example, there was no quantification of greenhouse gas emissions expected across the project's lifespan. This means the Department does not know the level of emissions committed to through its equipment plan for procurement and support, whether for an individual project or cumulatively.

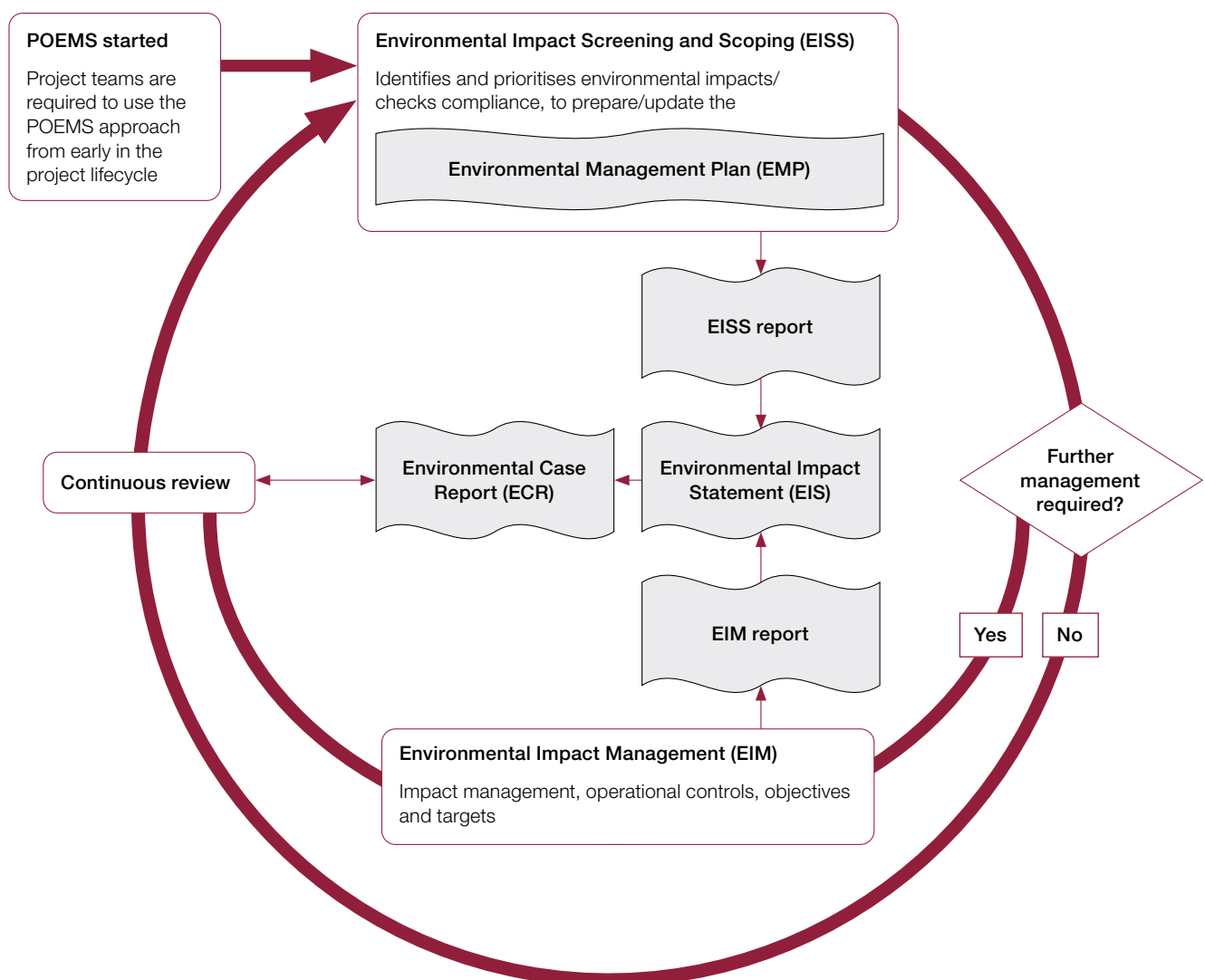
¹² The Mechanised Infantry Vehicle project, the Lightning F-35 fighter, Offshore Patrol Vessels, and the Queen Elizabeth Carrier programme.

- The environmental statement for *HMS Prince of Wales*, prepared in December 2019, reported that an assessment was under way to determine an accurate date of construction, so that the correct regulations were followed. If work started prior to 1 January 2011, less exacting nitrogen dioxide emissions standards would apply.

Figure 15

The Project Oriented Environmental Management System

Defence Equipment & Support, an arm's-length body of the Ministry of Defence, requires all acquisition projects to manage environmental risks using the Project Oriented Environmental Management System (POEMS) system



□ Process

▭ Report

◇ Decision

Source: Ministry of Defence, *An Introduction to Environmental Management in the MOD Acquisition Process* (2018)

Management of environmental impacts in the supply chain

3.9 The Department's procurement policies towards its supply chain can provide opportunities to influence improvements in the sustainability of industries both in the UK and overseas. The Department's expenditure with suppliers represents more than 40% of all UK government procurement spend, with the Department paying £24.8 billion to other organisations in 2018-19. Of this spend, 43% was with just 10 suppliers, four of which rely on the Department for more than 10% of their global income.

3.10 Policy on how commercial officers should implement Departmental and wider government sustainable procurement policies is set by the Department's Commercial Policy Team, rather than by DE&S. The Department's sustainable procurement commercial policy states that "sustainable procurement factors should be considered in all procurement activities, regardless of size or scope". The Department's 'commercial toolkit' provides extensive guidance to commercial officers, including on sustainable procurement. This includes example contractual terms, and questions to be asked during the tendering process. Procurement guidance targeted at both Departmental staff and contractors also includes a section explaining the policies, legislation and strategy for sustainable procurement, but there are gaps in coverage. For example, standard contractual terms are available to compel suppliers to use sustainable timber, but not to encourage greenhouse gas reduction or biosecurity.

3.11 Since 2016-17, the government has not required departments to report compliance data for government's sustainable procurement buying standards. Qualitative information is reported instead. As we have seen with other departments, the Department no longer collects the data to monitor its own compliance, beyond the use of its environmental assessment for infrastructure projects (Part Two). When the Department last reported its performance in 2015-16 it achieved 100% compliance in four buying standards and more than 80% compliance for paper procurement.¹³ Commercial officers are responsible for monitoring compliance with the contracts they manage. There is no central reporting of compliance with environmental conditions, so the Department does not know how effective the model contract terms are, or the extent to which guidance is followed.

3.12 Following changes to Cabinet Office reporting requirements, the Department no longer produces a stand-alone annual sustainability report, instead incorporating sustainability reporting into its annual report and accounts, so as to present environmental sustainability alongside social and economic reporting. The new form of reporting does not discuss the actions the Department is taking to influence the sustainability of its supply chain, which was previously included as a discrete section. As with government buying standards, the lack of reporting in this area risks reducing the impact of the Department's efforts to influence sustainability in its supply chain.

¹³ There are 11 sustainable procurement government buying standards, but reporting was only required against five of these.

3.13 Discussion of environmental management and sustainability with major suppliers takes place through the Department's sustainable procurement working group. The group meets up to four times a year and includes representatives from six major defence companies. It maintains a risk register of environmental and sustainability issues relevant to the Department's business, and potential mitigation measures. Risks tracked in this way include climate resilience, energy management and waste management, but the 'environmental management' risk talks about specific incidents, such as legacy radioactive waste and pollution events, without consideration of wider continual impacts, such as on biodiversity. The group also provides an opportunity for suppliers to share examples of good practice in managing defence projects sustainably.

Part Four

Policy, governance and leadership

4.1 This part of the report examines the Ministry of Defence's (the Department's) approach to environmental and sustainability policy, and governance. It covers:

- policy and the Ministry of Defence;
- high-level governance structures;
- the role of the Defence Safety Authority (DSA);
- the role of the front-line military Commands; and
- environmental reporting.

Departmental policy on sustainability

4.2 Security policy, including the role of the Department, is set at a high level through the National Security Strategy and Strategic Defence and Security Review, most recently in 2015. Neither they nor the Defence Strategic Direction which flowed from them made any commitments relating to the role of environmental sustainability. These documents were due for refresh in 2020 as part of the Integrated Security, Defence and Foreign Policy Review (Integrated Review), which has now been paused. The Department is not responsible for directly developing government policy on the environment. Instead, the Department is responsible for developing internal policy documentation that clearly communicates its expectations of military personnel and its other staff and contractors, including in relation to environmental issues.

4.3 The Secretary of State for Defence has published a policy statement on health, safety and environmental protection, setting expectations for the Department. This requires that the Department complies with all applicable legislation. If the Department is exempted from legislation, or requirements are lessened for operational or practical reasons, the Department should have "arrangements that produce outcomes that are, so far as reasonably practicable, at least as good as those required by UK legislation". The DSA has responsibility for identifying and managing these exemptions. The approach to exercising this responsibility varies across the organisational structure of Defence Equipment and Support (DE&S). The DSA maintains several databases of legislation, with the Maritime Legislation Database now being further developed to provide an integrated, single view of relevant legislation. This tool already contains most environmental protection legislation since many of the regulations captured by the database are cross-cutting. For example, 16% of environmental 'rules' recorded in the Maritime Legislation Database have been identified as containing a defence dis-application, exemption or derogation.

4.4 The Department's annual Defence Plan sets priorities and targets for the coming year. In 2019 this included targets linked to the Greening Government Commitments (GGCs) and the United Nations Sustainable Development Goals. The Defence Plan links the Sustainable Development Goals to UK national security objectives, and sets out the Department's activities to achieve them, with targets and individuals responsible for activities. The links to Departmental planning are more comprehensive than those we saw in other departments, even though the Department does not have a lead role for any of the government's environmental targets. However, there are some significant gaps in the environmental coverage of the Defence Plan. While it states that it has systems in place to protect biodiversity and promote sustainable construction to support government's wider policy objectives on these issues, it does not contain any specific activities, policy milestones or delivery dates for these.

Overall governance arrangements

4.5 The Department has complex oversight arrangements for the environment, mostly tied to governance arrangements for safety. These arrangements are set out in **Figure 16** on pages 38 and 39, with more detail on the committee and working group structure set out in **Figure 17** on pages 40 and 41. The Secretary of State's policy statement allocates the following responsibilities:

- the Secretary of State has overall responsibility for compliance;
- the DSA has responsibility for assurance of reported compliance; and
- the chief executive or equivalent of each executive agency and military Command must set down, and implement, health, safety and environmental protection management arrangements in their area of responsibility.

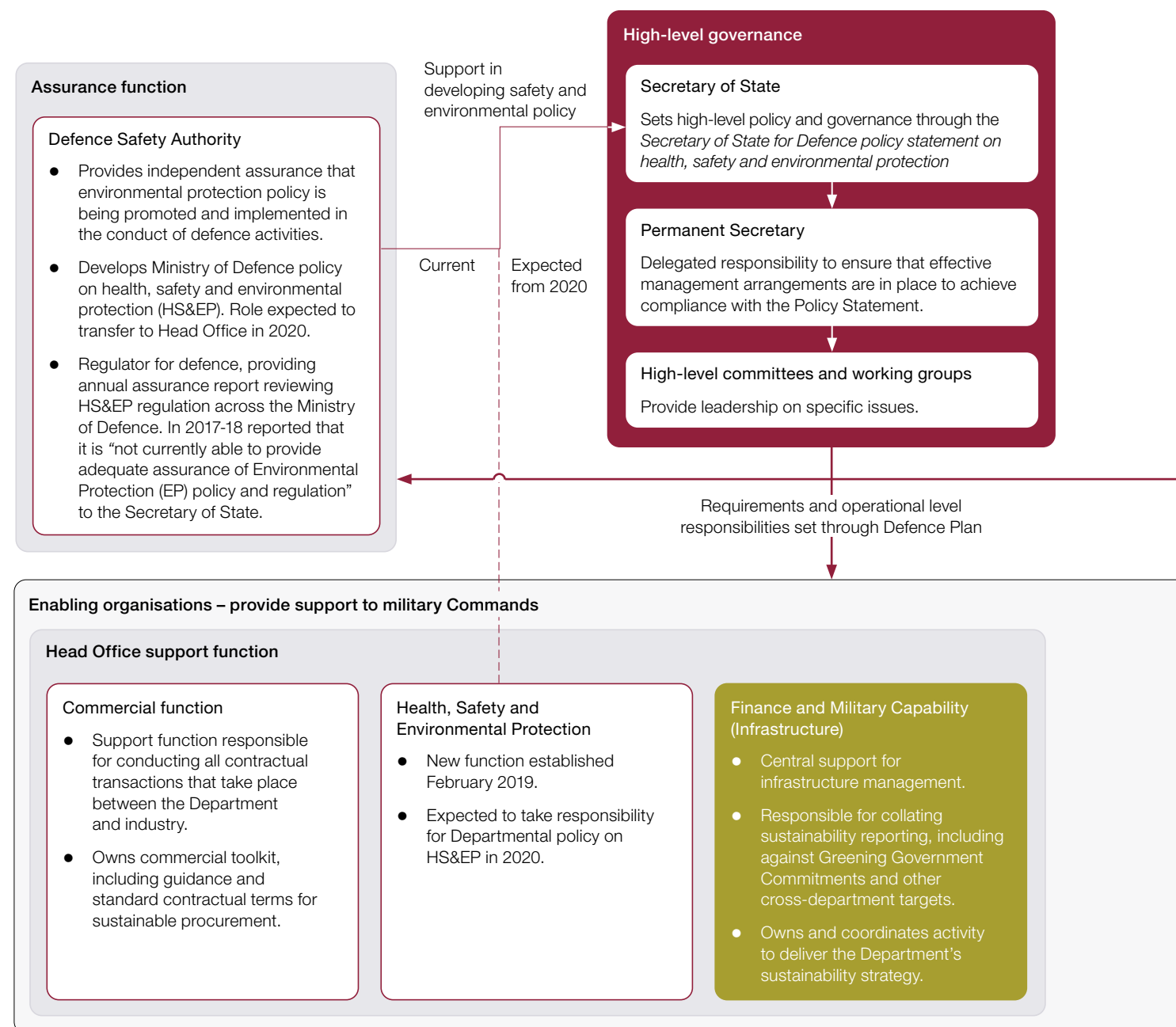
The Secretary of State's policy statement was updated in April 2020 to additionally allocate responsibilities to the newly appointed Director of Health, Safety and Environmental Protection, and to the new Defence Safety and Environment Committee (DSEC).¹⁴ Coordination of environmental activity varies by issue. For example, sustainable procurement requires the involvement of DE&S, the Defence Infrastructure Organisation (DIO), and Defence Digital, and is led by the Department's commercial arm, notwithstanding Finance and Military Capability's role in coordinating overall sustainability work.

¹⁴ Ministry of Defence, *Secretary of State for Defence policy statement on health, safety and environmental protection*, April 2020, available online at: www.gov.uk/government/publications/secretary-of-states-policy-statement-on-safety-health-environmental-protection-and-sustainable-development

Figure 16

Sustainability governance and responsibilities in the Ministry of Defence

The Ministry of Defence (the Department) has a complex environmental governance structure, with responsibility allocated across the organisation. The Finance and Military Capability function has a central coordinating role, but no one body directs all activity



□ Individuals, groups, organisations and Commands

■ Central coordination role: currently led by Finance and Military Capability in Head Office

■ Functions

Source: National Audit Office analysis of Ministry of Defence information

Military Commands (Top Level Budget holders)

- Required to produce a Safety and Environment Management System for activities within area of responsibility.
- Assigned responsibility and targets for meeting Greening Government Commitments and UN Sustainable Development Goals through the Defence Plan.
- Allocated direct budgetary responsibility for infrastructure and associated targets, including environmental, in April 2018.

Army

Navy

Air

Strategic
Command**Defence Equipment and Support**

- Manages programmes for equipment procurement and support.
- Owns Acquisition Safety & Environmental Management System.

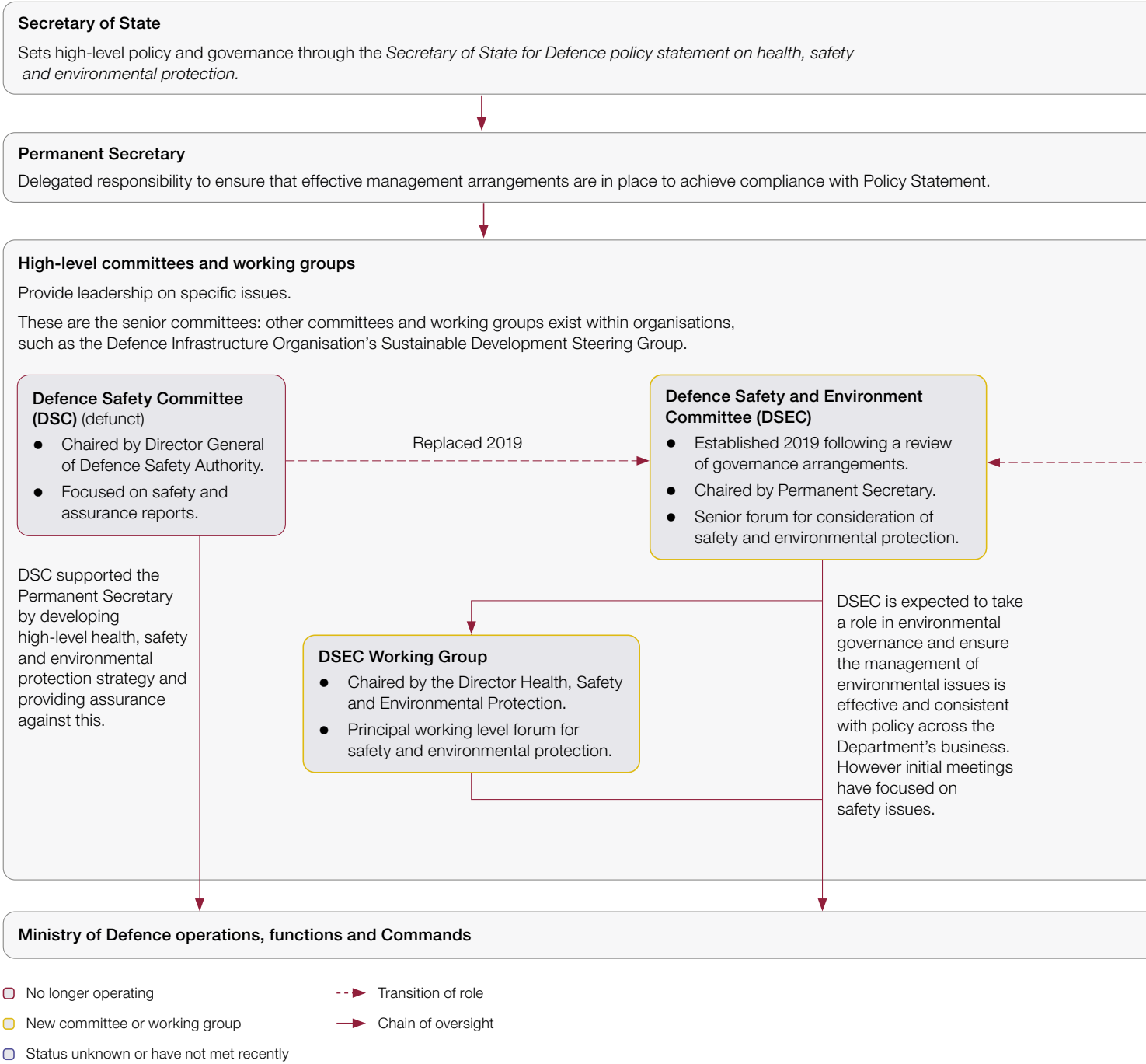
Defence Infrastructure Organisation

- Top Level Budget holder that supports armed forces by planning, building, maintaining, and servicing infrastructure.
- Budgets and decision-making responsibilities are held by the relevant departmental TLBs.
- Support services include several teams with an environmental focus, including ecologist support and a central budget for Site of Special Scientific Interest work.
- Owns the Department's *Sustainability and Environmental Appraisal Tools Handbook*.

Top Level Budget holders (TLBs) are responsible for the performance of their organisations. This extends to environmental issues, which are incorporated into the Defence Plan. There are seven TLBs. Five are illustrated in this diagram, the others are Head Office Corporate Services and the Defence Nuclear Organisation. Command Plans agreed between each TLB and the Permanent Secretary are directed by the annual Defence Plan.

Figure 17
Committees and working groups with high-level responsibility for environmental sustainability in the Ministry of Defence

The Ministry of Defence (the Department) is in the process of introducing new arrangements for governance of health, safety and environmental protection



Source: National Audit Office analysis of Ministry of Defence information

Roles expected to be incorporated into DSEC in some form.

Sustainability Champion (status unclear)

- Role previously held by Director General Head Office and Commissioning Services (DG HOCS), supported by Deputy Chief of Defence Staff, Military Capability (DCDS Mil Cap).
- Owns the *Sustainable MOD strategy: act and evolve 2015–2025*.
- The Department's annual report indicates role now held by the Chief Operating Officer, but exact arrangements have yet to be established.

Sustainable MOD and Energy Steering Group (SMESG) (last met July 2018)

- Chaired jointly by DG HOCS and DCDS Mil Cap in role as sustainability champions.
- Supports Sustainable MOD strategy.

The sustainability champions and SMESG formally led on sustainability through ownership of the Sustainable MOD strategy. The extent to which DSEC will take on these roles going forward is unclear.

Sustainable MOD Working Group (last met July 2019)

- Chaired by deputy head, policy team, Defence Infrastructure Organisation secretariat.
- Coordinates compliance and embedding sustainable development strategy across the Department.

The Department's review of governance committees

4.6 Arrangements for high-level governance of the objectives set out in the Secretary of State's policy statement are currently changing, with several former committees being replaced by new arrangements. The Department's 2018-19 annual report identifies the chief operating officer and the Deputy Chief of Defence Staff for Military Capability as sustainability champions and states that they co-chair a senior steering group to manage sustainability, as well as owning the Department's sustainability strategy, last updated in 2015.¹⁵ The Sustainable MoD and Energy Steering Group has not met since July 2018, and it is not clear what, if any, activity has been carried out by the sustainability champions since then. The Department acknowledges the need for increased senior leadership and has recently appointed the outgoing Chief of Defence People to lead a review of the Department's response to the net zero emissions target, as part of the Integrated Review.

4.7 In 2018 the chief operating officer commissioned a review of Head Office governance and resourcing in health, safety and environmental protection. The review focused on safety, although the reviewing team argued that many of the behaviours central to good health and safety practices are similar to those underpinning environmental considerations. The report found that the centre of the Department "remains worryingly unsighted on its overall performance in respect of health and safety and environmental responsibilities". It raised particular concern over the split of responsibility for environmental protection across the organisation, with ownership of environmental protection policy shared between the DSA and Head Office. In response, the Department established a new Defence Safety and Environment Committee (DSEC), chaired by the Permanent Secretary. The terms of reference of the new committee do not include any specific, separate responsibilities relating to the environment, instead presenting all the Committee's responsibilities as an overarching category of 'health, safety and environmental protection'. The Department also established a new Head Office Directorate of Health, Safety and Environmental Protection in February 2019, which achieved initial operating capability in March 2020.

4.8 In addition to the committees with high-level responsibility for environmental sustainability, the Department has a variety of relevant working level groups and committees. These include DIO's Sustainable Development Steering Group, the Suppliers Sustainability Working Group and the Defence Utilities Group. These groups have developed over time to bring together expertise and decision-makers from across the Department and its stakeholders, but vary in approach and influence dependent on membership.

¹⁵ Ministry of Defence, *Sustainable MOD strategy 2015 to 2025*, February 2016, available at: www.gov.uk/government/publications/sustainable-mod-strategy-2015-to-2025

4.9 We have not seen any other government department link health, safety and environmental governance so closely. There are some legitimate reasons for doing so in defence. The Department has unique and critical responsibilities for managing serious risks of hazard and damage, particularly through its military training exercises. The association with safety means that the Department's approach to the environment has focused on the avoidance of incidents, rather than on the positive contribution it can make to government's wider environmental goals. The Department's 2018 review also observed that environmental protection "is often treated as a 'Cinderella' subject" compared to safety, rarely subject to the same level of attention. The introduction of DSEC is an opportunity to raise the profile of environmental protection and to contribute to wider sustainability. However, across the Committee's three meetings in 2019 there was only a single agenda item relating to an environmental issue.

The role of the Defence Safety Authority in environmental protection

4.10 DSA, established in 2015, is responsible for Departmental policy on health, safety and environmental protection, particularly for introducing policies and regulations where the Department is exempt from external legislation. DSA's annual assurance report for the Secretary of State focuses on safety, although it also discusses environmental protection. In 2017-18 it reported that it was "not currently able to provide adequate assurance" of environmental policy and regulation to the Secretary of State, due to a lack of consistent or coordinated assurance activity across the Department. It repeated this message in 2018-19, stating that areas where environmental protection regulation and policy is mature (such as maritime protection) generally have good assurance, but that central coordination would improve environmental protection in defence. DSA considers that it lacks the staff to carry out its environmental protection activities in full.

4.11 Although Departmental guidance requires that all environmental incidents are reported to DSA, there is no single reporting tool, resulting in a variety of reporting approaches and databases, and no centralised log of incidents. This may result in incidents going unreported through lack of awareness of this requirement, or due to the lower priority placed on environmental incidents compared to safety. DSA's Defence Accident Investigation Branch only recorded one potential environmental impact being reported to them between August 2017 and September 2019. An Environment Agency log for the same period identified 24 pollution incidents on Departmental sites, although none were considered environmentally serious.

The changing role of the military Commands

4.12 The Secretary of State's policy statement requires that each of the front-line Commands develop a safety and environmental management system. This is a detailed plan which sets out the Command's arrangements for health, safety and environmental protection (HS&EP). Each of the Commands has a chief environment and safety officer (CESO), who is independent of the chain of command and responsible for providing advice and assurance on HS&EP to the head of their Command. Each CESO has a small team of subject matter experts trained in HS&EP compliance who carry out an annual assurance programme for the Command's 'senior duty holder' (usually the Chief of Staff). How Commands gain assurance varies – the Army has a tailored set of environmental audit questions targeted at its specific needs, whereas other Commands use a standard set of HS&EP questions which assess the structures in place to ensure compliance.

4.13 DIO took over responsibility for infrastructure budgets from the Commands in 2011, with a number of staff with expertise in this area moving as part of organisational changes in 2014. In 2018 the infrastructure budget for the defence estate transferred from DIO back to the Commands, to give them greater influence over changes to the estate and making them accountable for most infrastructure funding. With this additional responsibility, Commands must once again consider the broader environmental sustainability of the estate's infrastructure. DIO retained its role as subject matter expert. While some of the Commands reported that engagement with DIO is working well, others expressed frustration that the return of the infrastructure budgets did not also come with additional capacity and expertise.

4.14 Historically the Commands and their CESOs have focused heavily on health and safety, in part reflecting the priority of the overarching governance committees. Despite the historical lack of clear objectives and deliverables from Head Office to drive environmental sustainability, there are increasing levels of activity and interest in environmental sustainability across the Commands, including introduction of sustainability champions in Strategic Command and Air, and the development of specific environmental protection plans in Navy and Air. The delegated budgets of the Commands mean that, while they are able to make their own decisions on the priority to give to environmental protection, these needs must compete with other priorities for limited resources.

4.15 During the course of our audit we have seen several examples of an increasing awareness of environmental issues within the Department, particularly relating to the government's target for net zero carbon emissions. The 2020 Defence Plan continued development of the environmental protection metrics introduced in previous years through use of additional targets and data. The Department has begun to discuss the risks and opportunities relating to the environment both internally and with other departments. The Department's lead for its new Climate Change and Sustainability Review, announced in March 2020, has met with officials at the Department for Environment, Food & Rural Affairs to discuss the role that the Department could play as a catalyst for improvements across government, particularly alongside other major landowners such as the Ministry of Justice and the Department for Health & Social Care.

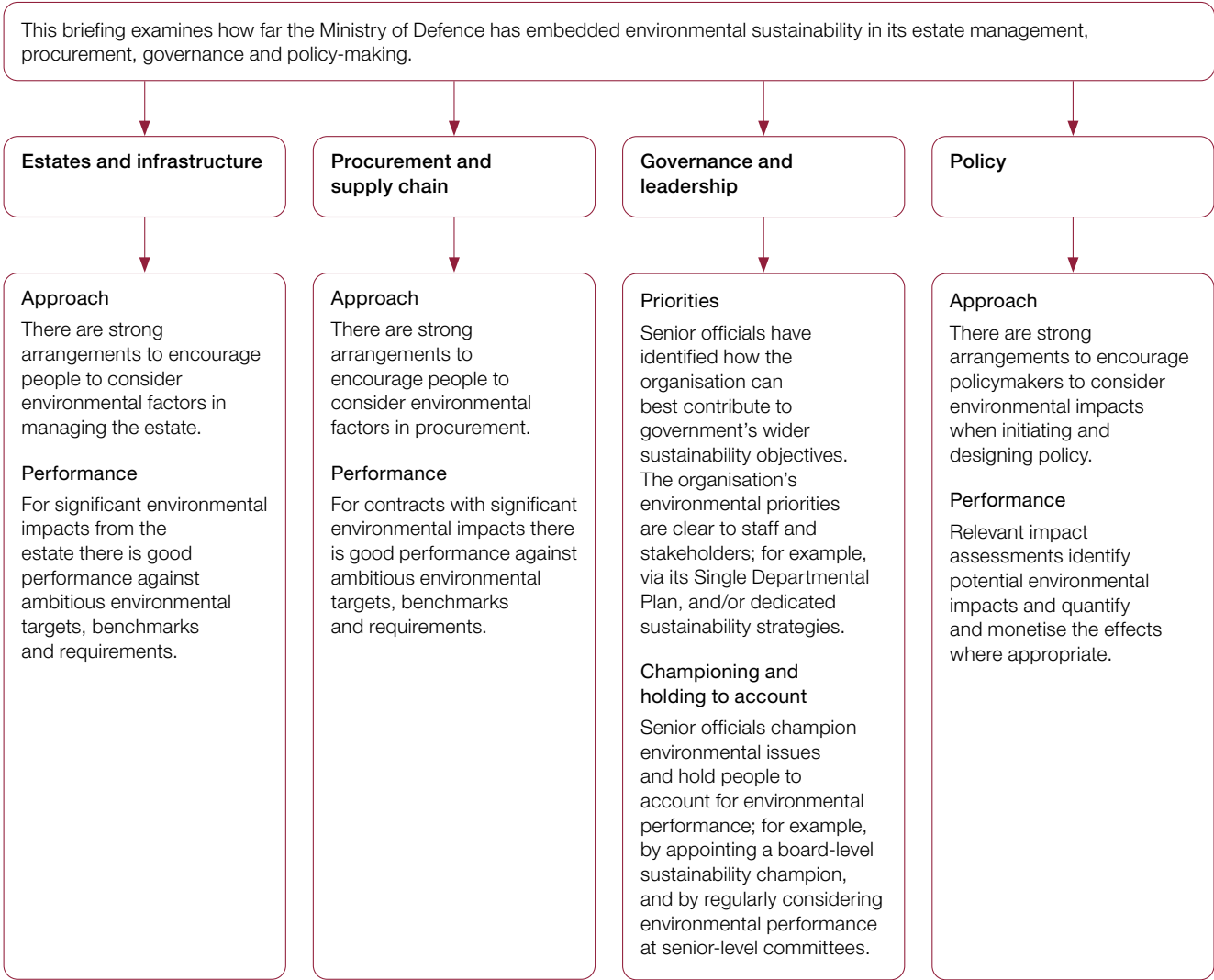
Appendix One

Our audit approach

Good practice criteria

1 Our sustainability overviews are guided by good practice criteria developed by the National Audit Office through our review of environmental sustainability in other departments (**Figure 18** overleaf).

Figure 18
National Audit Office good practice criteria for environmental sustainability



Source: National Audit Office

Appendix Two

Our evidence base

- 1 We prepared this briefing using evidence collected between August 2019 and March 2020.
- 2 We conducted two workshops with representatives from the Ministry of Defence's (the Department's) Head Office, the Defence Infrastructure Organisation (DIO), Defence Equipment and Support (DE&S) and the Defence Safety Authority (DSA) to understand how their organisations work.
- 3 We interviewed Departmental officials and other relevant organisations to discuss the Department's approach to sustainability, and recent achievements and challenges, including: Deputy Chief of Defence Staff Military Capability; chief environment and safety officers for four Commands; the deputy director infrastructure capability and the head of defence commercial policy; DIO's chief executive and chief operating officers; and representatives from the Environment Agency and Natural England.
- 4 We examined the following data to understand performance against targets and the Department's governance arrangements for sustainability:
 - Board papers and both published and internal reports and guidance relating to environmental matters.
 - Greening Government Commitment performance data.
 - Fuel usage and greenhouse gas emissions data.
 - Defence Related Environmental Assessment Methodology data for building refurbishments and major constructions.
 - Environmental assessments for a sample of major equipment procurements.
 - Records on the condition and management of Sites of Special Scientific Interest.
 - Ministry of Defence non-military vehicle fleet data.
- 5 We conducted site visits to the Salisbury Plain training area, West Down Camp, Larkhill Garrison, and new-build service families accommodation at Larkhill.

6 Due to the breadth of the Department's activities it was necessary to exclude some aspects of possible environmental impact from our scope. The most notable exclusion is issues related to nuclear energy and disposal of radioactive waste. This area is subject to bespoke regulations and accountability arrangements that are separate to the other environmental approaches discussed in this report. Separately, the National Audit Office has recently addressed the issue of defueling decommissioned nuclear submarines.¹⁶

¹⁶ Comptroller and Auditor General, *Investigation into submarine defueling and dismantling*, Session 2017–2019, HC 2102, National Audit Office, April 2019.

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