



Ministry
of Defence

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**Greening Government Commitments
Annual Report 2012/13**

Defence Infrastructure Organisation

July 2013

Greening Government Commitments Annual Report 2012/13

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Introduction

1. This report outlines the Ministry of Defence's (MOD) Sustainable Development (SD) performance against the Government's targets.

2. The current coalition government introduced the Greening Government Commitments (GGC) in 2010. The targets follow on from the previous Sustainable Development (SD) targets called Sustainability on the Government Estate (SOGE), which finished in March 2011. The GGC targets require MOD and other Government Departments to increase sustainability savings on top of the SOGE savings achieved.

3. The MOD protects the security, independence and interests of our country at home and abroad. We work with our allies and partners whenever possible. Our aim is to ensure that the armed forces have the training, equipment and support necessary for their work, and that we keep within budget. Training, equipping and supporting the MOD's operations requires land, resources and people. These must be managed in the most sustainable manner.

4. The global demand for scarce resources, climate change, and global unrest are some of the factors that will affect the future security environment. Incorporating sustainability into operations, acquisitions and infrastructure will reduce demands on scarce resources, save money and enhance flexibility. The embedding of sustainable principles and practices produce many benefits across Department that enhances our resilience.

a. By implementing sustainability principles and practices, we will decrease future constraints, increase flexibility and resilience, safeguard human health, and enhance the natural environment

b. By implementing sustainability principles and practices, the MOD will decrease future constraints, increase flexibility and resilience, safeguard human health, and enhance the natural environment

5. The GGC targets are included in key department documents such as the Business Plan 2013-2015 <http://transparency.number10.gov.uk/business-plan/18> and the MOD Sustainable Development Strategy

<https://www.gov.uk/government/publications/sustainable-development-strategy>.

Embedding the GGC targets as MOD targets will make sure that all parts of Defence work towards their success.

6. Responsibility for SD policy in MOD is with the Chief Executive, Defence Infrastructure Organisation (CE DIO). CE DIO has responsibility for managing the Defence estate and many SD functions such as, energy, water, biodiversity and conservation. Including SD policy within the CE DIO portfolio will allow him to champion SD values and coordinate MOD action to achieve the GGC targets and the SD Strategy.

Summary of GGC Performance

7. Below is a summary of MOD's performance and the SD data is in Annex A.

Greenhouse Gas Emissions

8. This target is to reduce emissions from estate energy (e.g. electricity and gas etc.) and UK travel for administrative business (i.e. travelling to meetings) by 19% with a further 6% being provided as a result of decarbonisation of the national grid. The energy baseline is for the MOD core estate, i.e. sites that MOD has a long-term interest. The core estate includes all the major sites and accounts for around 80% of MOD's total estate emissions. A core estate baseline focuses efforts to reduce consumption at the major sites and allows

offers the best value for money when investing in infrastructure projects. MOD's infrastructure investment programme includes smart meters new boilers and energy optimisation. Indications are that the MOD will meet its GGC target by the end of March 2015. The Department has so far achieved a 12% reduction against the emissions target. Good progress has been made in delivering the next phase of the Invest-to-Save programme with savings in excess of target demonstrated for the year one investment of £10M. Implementation of the year two (£40M) programme is well underway and the majority of the year three programme (£55M) has been submitted for delivery in FY13/14. All Regional Prime Contracts now have energy bureaux, which are delivering improvements in energy use at the MOD's largest consuming sites in the UK. MOD's electricity supply to its largest sites is now 100% 'green' (a mixture of renewable and Combined Heat and Power generated power).

Waste

9. The MOD has a target to reduce its waste by 25% against a 2009/10 baseline as part of the GGC. Sites are making good progress in reducing waste generation with many successful initiatives. However, performance to date is erratic and the estimated performance for 2012/13 is a 13% reduction against the baseline. Reported waste includes that which is sold, reused and recycled. MOD is currently diverting approx. 80% of its waste from landfill. Waste volumes are erratic due to successful delivery of Strategic Defence and Security Review initiatives (reducing storage capacity, equipment fleet replacement and base closures) and the return of assets from Afghanistan for sale. The full benefits from some of the current waste reduction activity will not be realised until after 2015, such as through the next generation of estate contracts. For these reasons, it has not been possible to develop and implement a progressive planned reduction in waste to meet the 25% reduction target. MOD has a significant challenge to reduce waste sufficiently by 2015, and additional initiatives are being developed to further reinvigorate action.

Water

10. For 2012/13, we have achieved a 9% reduction in consumption (or 2.25M m³), and have exceeded our 7% reduction target for estate water two years early. This reduction was achieved from new efficient facilities, active leakage control, improved water awareness, water equipment controls, such as reduced flow cisterns and more efficient showers and toilets, and estate rationalisation. Meeting this target early is a significant achievement. The department is not complacent and we will continue to reduce water demand. Upcoming plans for water efficiency are focussed on measures inside buildings, including development of smart metering and conducting building water supply survey and analysis. This will enable tracking of real-time consumption and monitoring of usage profiles to highlight issues.

Domestic Flights

11. This target is to reduce commercial air flights in the UK by 20%. There has been a 9% reduction in domestic flights against the baseline, although this is an increase on the 2010-11 total. Progress has been affected by the current significant changes from organisation restructuring and re-locating units, and due to the spread of MOD locations in south east England, south west England, Northern Ireland and Scotland, some air travel is unavoidable, and can be the cheaper and the quickest travel option. Work is underway to identify further measures to improve the decreases in domestic air travel, and MOD advocates the use of video conferencing and telephone conferencing to minimize travel required.

Paper Demand

12. This target requires a 10% reduction in the quantity of A4 and A3 printer paper procured. MOD's paper procurement has increased in the last year and the reduction now stands at 3% below baseline. We are investigating paper use across MOD to find efficiency savings to achieve a minimum 10% saving.

Sustainable Procurement

13. Sustainable Procurement is a key element in the planning and delivery of military capability. In-year progress was delayed due to resource constraints and re-organization: the MOD Sustainable Procurement Team was disestablished and policy responsibility transferred within Defence Equipment and Support with a much-reduced resource.

14. MOD continued to sponsor the Defence Science and Technology Laboratory's (DSTL) Resilience Research Programme, which focuses on energy (supply and demand), materials security including Rare Earth Elements, adaptation to climate change, emissions, and decision-making tools. The outputs are used to inform capability planning processes and decisions, and further acquisition guidance was issued on the Acquisition Operating Framework on managing the risks of materials security. On broader engagement, the MOD worked with Other Government Departments and stakeholders to identify and understand the global impact of climate change and resource security, and their effects on UK interests and security. For instance, MOD is a key member of an inter-Departmental group focused on resource security. In addition to sustainable procurement activity, MOD's Climate and Energy Security Envoy continued to act on behalf of Government, engaging in a range of activities to further domestic and international understanding of these issues and of the actions necessary to reduce the risks to global security.

15. Building on the Sustainable Procurement Awareness On-Line Training course launched in the previous year, MOD designed a more advanced Sustainable Procurement training workshop, which introduces techniques available to the acquisition community on addressing sustainability risks in equipment projects. Both are free at point of delivery to MOD staff through the Defence Academy.

16. Data on compliance with mandated Government Buying Standards (GBS) remains incomplete. A further Defence Internal Audit project was commissioned to better understand the scope for making performance management improvements. Regarding food procurement, the majority of UK based MOD personnel are catered for under regional or multi-activity contracts, or catering, retail and leisure contracts. Contractors are obliged to source on the open market consistent with meeting EU competition rules and quality standards, and GBS. MOD food provision, in terms of the operational arena and in circumstances of extreme training conditions, is exempt from those GBS, which may adversely affect the nutritional status and well-being of personnel. In these circumstances it is recognized that that the personnel are operating under very different circumstances to those which the GBS criteria were developed to meet.

17. Targets are still being agreed with key suppliers on reducing greenhouse gas emissions, and water and waste consumption: this is managed through the joint MOD-Industry Sustainable Procurement Working Group.

Biodiversity and the Natural Environment

18. MOD has continued the proactive management of its protected sites and has exceeded the Natural England reporting target, with 99% of Sites of Special Scientific Interest (SSSI) in favourable or unfavourable recovering condition in England. Across the

rest of the UK, SSSI performance is Scotland 94%, Wales 76%, and Northern Ireland 100%. MOD continues to use its Environmental Management systems, integrated management plans and sustainability appraisals to address biodiversity and natural environment impacts and opportunities. MOD publishes its full SSSI data at http://www.data.gov.uk/dataset/mod_estate_information

19. Biodiversity monitoring activities on the defence estate include formal statutory body assessments of SSSI condition, but also a wide range of formal and informal approaches. Amongst the most formal is monitoring habitat extent and quality on Salisbury Plain Training Area (SPTA), a legal commitment that the MOD made to demonstrate effective management training and the environment following the Strategic Defence Review in 2002. This monitoring is done in partnership with the Centre for Ecology and Hydrology and the findings of the second 5-yearly report were put to the SPTA Environmental Steering Group in September 2012. More informal monitoring is done by an army of volunteers, mainly members of the MOD's 125 Conservation Groups, including many national, regional and county lead recorders. This information all contributes to our approach of 'adaptive management' – looking out for trends and any signs of damage from military activities, estate management or public access and responding accordingly.

20. MOD promotes its successes across the estate by MOD personnel and conservation groups by the Sanctuary Awards each year and Sanctuary Magazine. Sanctuary illustrates MOD's commitment to conservation projects and how we undertake our responsibility for stewardship of the estate in the UK and overseas. Sanctuary is available from the internet at – <https://www.gov.uk/government/publications/sanctuary>.

Climate Change Adaptation

21. The MOD has worked with other Government Departments and stakeholders to identify and understand the global impact of climate change on resource security and the effects on UK interests and security. MOD's Climate and Energy Security Envoy continued to engage in a range of activities to further domestic and international understanding of these issues and of the actions necessary to reduce the risks to global stability.

22. MOD is taking action to ensure programmes with long term implications are robust in the face of changing weather, extreme events and sea-level rise. We have supported climate change adaptation of defence business by:

- a. roll-out of climate impacts risk assessments (CIRAM) across defence critical sites;
- b. development of guidance, awareness and training on increasing estate climate resilience,
- c. embedding Climate resilience considerations into estate management processes.
- d. launching a sustainable procurement workshop on equipment acquisition;
- e. increasing the climate resilience considerations in the Resilience Research Programme.

Environmental Management System (EMS)

23. An EMS is a structured framework for managing an organisation's significant impacts on the environment. EMS are used to manage and improve environmental

performance and help compliance with environmental legislation and MOD regulations. An EMS can also help generate financial savings for the Department through helping instigate efficient practices. MOD is committed to ensuring all sites are covered by an appropriate EMS by 2015; currently the Department is on track to meet that commitment.

Sustainable Construction

24. All new builds and major refurbishments are subject to MOD's Defence Related Environmental Assessment Method (DREAM) or Building Research Establishment's Environmental Assessment Methodology (BREEAM) assessment. DREAM is a MOD developed tool that is specific to the defence estate and defence projects allowing the MOD to assess the environmental impacts of its construction activities. In 2012/13, 77% of new builds and 84% of major refurbishments achieved target rating.

25. A review of DREAM assessments for Projects that did not meet the target rating identified two common reasons:-

- The scope of the project meant that insufficient credits were available to achieve the target rating within value for money criteria (e.g. energy credits not available for an indoor firing range)
- Assessments started late in the project delivery process missing the opportunity to influence decision making on the environmental performance of the building.

26. Suppliers Association members signed a voluntary Waste Charter in 2008/09, agreeing to halve waste to landfill by the end of 2012. In 2007/08 54% of construction waste was diverted from landfill and an MOD target was put in place to raise this to 80% diverted from landfill by 2012. Whilst the final performance is not yet available for 2012/13, indications are that this target has been exceeded with construction waste diverted from landfill standing at over 95%. Greening Government Commitments require MOD to manage construction waste to best practice standards, MOD is committed to achieving this standard.

People

27. The MOD conducts Sustainability Appraisals (SA) of all its major plans, programmes and projects (including the relocation of any civil estate offices). This ensures that the impact on staff, as well as the wider environmental and socio-economic impacts and opportunities can be assessed, e.g. a tiered level of appraisals have been undertaken in support of the Basing Optimisation Programme to "develop a more coherent and cost effective solution" for basing arrangements. In the past, MOD has only reported on the number of SAs completed for civil estate office relocations. From 2014/15, it is anticipated that DIO will be able to report on the number of SAs completed for all plans, projects and programmes.

28. The health of the department's civilian staff is central to their attendance and performance at work and their contribution to Defence outputs. One of our Civilian Workforce Sub Strategies is to continue to improve the productivity of the workforce, including health and attendance at work. In addition, PUS recently appointed a Health & Wellbeing Champion at senior level who is responsible for supporting and encouraging progress on particular aspects of the health and wellbeing agenda. The department also strives to ensure that employees have a healthy work life balance by providing a diverse range of family policies; providing the right to request flexible working, tackling work-related stress and addressing the long hours culture.

29. The health and wellbeing of Service Personnel is promoted through the Service Personnel Strategy and the Defence Health Strategy. Chief of Defence Personnel is committed to work with the Surgeon General to optimise Defence health services and advise the single-Services on health matters in order to maximise the numbers of personnel fit for task.

30. The health and wellbeing of our personnel, including those who have served (our veterans) and families is further promoted through the Armed Forces Covenant, the principles of which were first set out in the Armed Force Covenant, published in May 2011, which stated:

‘Those who serve in the Armed Forces, whether Regular or Reserve, those who have served in the past, and their families, should face no disadvantage compared to other citizens in the provision of public and commercial services. Special consideration is appropriate in some cases, especially for those who have given most such as the injured and bereaved’.

31. The Armed Forces Covenant Annual Report of 2012 covers a wide range of initiatives to support the health needs of the Armed Forces Community. These include the integration of mental health assessments into routine Service medicals, IVF treatment for those who suffer infertility as a result of injuries in Service and prosthetic provision from the NHS at the same high standard as that provided by the MOD. There has been further development of the Defence Recovery Capability and the Care Quality Commission acknowledged the high quality of service provided by the Defence Medical Services generally. The Cabinet Sub-Committee on the Armed Forces Covenant has also reaffirmed the Government’s commitment that Veterans accessing NHS services in England will be given priority treatment for Service-related conditions with similar arrangements in Scotland and Wales. The report identifies that more work is to be done implementing recommendations from the Care Quality Commission review and in establishing a unified MOD Defence Primary Healthcare Service. The Government is also committed to looking at what more can be done on reserves’ mental health.”

32. MOD encourages staff to be aware of the Department’s desire to reduce our environmental impact and promote sustainability across our estate, and examples include:

a. RAF Northwood held a sustainability week. Its aims were to promote: Supporting Sustainable Communities; Protecting our Environment; Enabling Low Carbon Economies; and Providing Better Prospects for our People. Activities included constructing a vegetable and growing patch for a local primary school; 20 presentations on the importance of recycling which were followed a week later by a visit a materials recycling facility; displays on energy consumption and water consumption; health checks and blood donor recruitment.

b. Sennybridge Training camp Camp is being used as MOD’s prime site for piloting energy saving initiatives. These include installing energy efficient lighting, fitting dehumidifiers in drying rooms; improved insulation and efficient modern heating to reduce energy costs and carbon emissions. Old Liquid Petroleum Gas (LPG) heaters were replaced with air-to-water heat-pumps. These are a low carbon alternative to traditional boilers and work like a refrigerator in reverse, producing heat. The Camp also has installed a 50 kilowatt peak solar photovoltaic array as part of our Energy Spend to Save programme. They will generate electricity, cut fuel costs and reduce DIO’s carbon footprint by an estimated 20 tonnes of CO₂ per year. The DIO Energy Spend to Save Programme is a 3-year programme over which time DIO Operations Training aims to halve its annual heating and electricity bill creating a yearly saving of approximately £3.5 million

from a baseline annual energy bill of £6.6 million in 2010/11. The energy saving measures introduced at Sennybridge have improved both working and living conditions for our staff and troops and will go some way towards saving energy and cutting costs.

c. Marne Barracks in Cheshire the introduction of an EMS system found large water consumption on the estate. Investigation found this was due to leakage caused by lime scale in the toilet flushing system. After an investment of £50K mostly for new toilets they have achieved water savings of over £500K per year.

d. Archaeologists from the MOD and City of Edinburgh Council have started work with world-renowned experts in military archaeology to assess the significance of First World War practice trenches at Dreghorn Barracks, Edinburgh. MOD archaeologists began working with specialists from the University of Glasgow's Centre for Battlefield Archaeology to uncover the full extent of the site. The team will chart the route and condition of trenches at Dreghorn Woods before making recommendations for future management of the site. This will allow MOD's historic advisers to work with a range of partners to begin developing a range of options about how the site might be managed in the future.

e. Bicester, one of the two main MOD warehouse and distribution sites generates a huge amount of packaging waste each year. The site waste team has worked with site users and contractors to develop solutions to increase site recycling to over 72%.

f. Hermitage Station Conservation Society developed a nature trail in a small wooded training area adjacent to the Dennison Barracks. The group worked with the local parish councils for support and financial donations for information boards. The nature trail is now used by local schools and scout groups as an educational aid and it is becoming a favourite among the local community.

g. At Royal Navy Air Station Yeovilton the energy manager has introduced a range of best practice initiatives. These have resulted in savings of £1.4m in year costs for heating and emissions.

MOD SUSTAINABLE DEVELOPMENT DATA

GGC targets (except paper) have a due date of 31 March 2015. All performance data is in year performance against the baseline year.

GGC Greenhouse Gas (GHG) Emissions - (1) UK Travel + (2) Energy - Target: 19% + 6% (from decarbonisation) = 25% (1,086,594 tonnes CO ₂ e)	2009/10	2010/11	2011/12	2012/13
Total tonnes CO₂e	1,448,792	1,442,394	1,285,676	1,280,067
% Performance		0.4%	-11%	-12%

(1) GHG Emissions Business Travel tonnes CO₂e	2009/10	2010/11	2011/12	2012/13
UK white fleet leased cars	27,842	27,229	26,706	26,715
Grey fleet civilian & military	31,931	26,773	23,107	19,078
Car hire	14,920	13,090	14,013	19,517
Commercial air travel (domestic)	10,508	8,310	8,310	8,390
UK rail travel	4,546	2,937	3,210	2,747
Total UK Business Travel	89,748	78,338	75,347	76,447
Performance		-13%	-16%	-15%
International commercial air travel is not a GGC target. The data does not include an RF factor.	87,826	70,357	96,005	91,844
All Business Travel	177,574	148,695	171,352	168,291

(2) GHG Emissions - Estate Energy tonnes CO₂e	2009/10	2010/11	2011/12	2012/13
Purchased electricity brown	794,922	798,260	672,784	Now purchased Green (see below)
Purchased electricity green	11,123	11,169	74,754	770,961
Natural gas	456,592	458,509	358,477	322,344
Gas oil (furnace fuel oil)	74,623	74,936	83,298	90,094
Coal	1	1	0	0
LPG	17,170	17,242	17,603	17,033
CHP - on site generation	1,586	1,148	1,003	785
Purchased energy/heat (Whitehall district heating system - CHP plant)	3,026	2,789	2,411	2,403
Fugitive emissions	NA	NA	NA	NA
Total	1,359,043	1,364,056	1,210,329	1,203,621
Performance		+0.4%	-10.9%	-11.4%

GGC Estate Water (including Office estate) Target: 7% reduction (23,225,469m ³)	2009/10	2010/11	2011/12	2012/13
Total m³	24,973,623	24,549,642	24,659,000	22,724,099
Performance		-1.7%	-1.3%	-9%

GGC Office Water Target (1): Meet or exceed benchmark of 6m ³ or less	2009/10	2010/11	2011/12	2012/13
Total m ³	206,029	186,101	193,075	172,354
Number of full time equivalents (FTE)	16,629	15,710	15,710	14,658
Performance (m³/FTE)	12.4	11.8	12.3	11.8

GGC Office Water Target (2): Percentage of office buildings meeting the benchmark for water consumption per Full Time Equivalent		2009/10	2010/11	2011/12	2012/13
• more than 6m ³ = poor	Poor practice building %	100%	100%	100%	89%
• between 4m ³ and 6m ³ = good	Good practice building %	0%	0%	0%	11%
• less than 4m ³ = best	Best practice building %	0%	0%	0%	0%

GGC Waste - Metric Tonnes Target: 25% reduction (139,078 tonnes)	2009/10	2010/11	2011/12	2012/13
Total waste	185,437	189,713	197,034	161,346
% Performance against GGC target		-2.3%	+6.3%	-13.0%
Total hazardous waste	14,279	11,332	5,700	4,278
Total non hazardous waste	171,159	178,381	191,334	157,068
Total landfill	57,542	53,393	44,244	29,563
% Diverted from landfill	69.0%	71.9%	77.5%	81.7%

Hazardous waste landfill	2,652	5,335	733	539
Hazardous waste reused/recycled	7,254	4,273	2,875	2,101
Hazardous waste with energy reduction	454	1,146	1,273	698
Hazardous waste no energy reduction	3,920	578	820	940
Non hazardous waste landfill	54,890	48,058	43,511	29,023
Non hazardous waste reused/recycled	90,560	94,796	121,507	100,931
Non hazardous waste composted	8,233	9,308	9,062	7,616
Non hazardous waste with energy recovery	9,722	18,364	12,094	17,654
Non hazardous waste without energy recovery	7,753	7,856	5,159	1,844

GGC Paper Purchased Target: 10% (1,118,126 reams) by 2011/12 after which the target performance is to be maintained or improved on.	2009/10	2010/11	2011/12	2012/13
Total equivalent A4 reams	1,242,363	NA	1,099,866	1,206,435
Performance			-11%	-3%

GGC Number of Domestic Flights Target: 20% reduction (53,019)	2009/10	2010/11	2011/12	2012/13
Total	66,274	53,300	56,656	60,524
Performance		-19.6%	-14.5%	-8.7%

Note – prior year's data for air travel has been recalculated following improved data availability.

Construction Waste Not a GGC Target	2009/10	2010/11	2011/12	2012/13
Total tonnes	48,580	44,293	40,000	57,650
Percentage of construction waste diverted from landfill	74%	75%	81%	92%

Equipment Energy – tonnes CO2e Not a GGC Target	2009/10	2010/11	2011/12	2012/13
Aviation fuel	2,114,201	2,018,877	1,954,417	1,768,715
Diesel (mineral and retail blend)	908,931	946,690	872,849	see below
Diesel mineral blend	-	-	-	573,270
Diesel retail blend	-	-	-	305,872
Gas Oil	225,047	240,790	229,157	122,671
Unleaded Petrol	16,315	10,681	13,021	10,005
Equipment energy total tonnes CO2e	3,264,494	3,217,038	3,069,444	2,780,533

Equipment Energy – Litres Not a GGC Target	2009/10	2010/11	2011/12	2012/13
Aviation fuel	827,800,000	792,400,000	767,100,000	693,097,195
Diesel (mineral and retail blend)	313,300,000	354,300,000	339,300,000	see below
Diesel mineral blend	-	-	-	214,154,456
Diesel retail blend	-	-	-	40,602,069
Gas Oil	105,800,000	79,700,000	74,900,000	118,394,423
Unleaded Petrol	3,800,000	4,600,000	5,800,000	4,461,721
Equipment energy total litres	1,250,700,000	1,231,000,000	1,187,100,000	1,070,709,864

MOD Sustainable Development Data Explanatory Notes

1. The data in these tables are not National Statistics because they have not been assessed as such by the UK Statistics Authority.
2. The data contained in this report is based on the baselines agreed for Greening Government Commitments (GGC). The GGC targets are for UK data. The MOD has tried to include as much of the UK data as possible and for some data sets, we have included data from our overseas estate.
3. Definition of emission scopes:
 - a. Scope 1 emissions occur from sources owned or controlled by the organisation. Examples include emissions as a result of combustion in boilers owned or controlled by the organisation. This includes emissions from organisation-owned fleet vehicles.
 - b. Scope 2 emissions result from energy consumed which is supplied by another party (e.g. electricity supply in buildings or outstations), and purchased heat, steam and cooling.
 - c. Scope 3 relate to official business travel directly paid for by an organisation (i.e. not business travel re-charged by contractors).
4. DEFRA conversion rates have been used to account for carbon
5. Carbon data in this report is shown as CO₂e; this is the six greenhouse gases covered by the Kyoto Protocol. They are: Carbon Dioxide (CO₂); Methane (CH₄); Nitrous Oxide (N₂O); Hydro fluorocarbons (HFCs); Perfluorocarbons (PFCs) & Sulphur Hexafluoride (SF₆)
6. GGC and HM Treasury reporting rules allow Departments to leave out bodies that fall below the de-minimis criteria. The department has been granted exemption not to include Non Departmental Public Bodies and other MOD funded bodies.
7. The MOD is large and complex with around 400 main sites and around 4000 sites in total. A site may contain a single building or dozens of buildings. MOD's Sustainable Development (SD) baselines include as much of the estate as possible but for reasons that include insufficient manpower and old contracts that do not provide the data required our baselines covers from around 75% to 90% of the Defence estate. The finance data covers spend for a budget item and this may exceed the scope of the SD data being reported.
8. SD data for: (1) travel, (2) waste and (2) water includes data from MOD's Trading Fund Agencies i.e. Defence Support Group, Defence Science and Technology Laboratory and United Kingdom Hydrographic Office.
9. **Estate Energy**
 - a. The Department of Energy and Climate Change agreed that the 25% Greenhouse Gas target should apply to the 398 core establishments which MOD has decided to retain for the long term. Achievement against the target will include 6% savings, which will be achieved from decarbonisation of the National Grid.
 - b. The 398 sites are located in the UK and overseas. These core sites account for around 80% of MOD's energy consumption.
 - c. MOD's Trading Fund Agencies are not included in the 398 core sites.
 - d. Estate energy data is not weather corrected.
10. **UK Business Travel**
 - a. The GGC target is for administrative business travel by Departments. We have defined business admin travel as business journeys on behalf of MOD. Greenhouse gas emissions from other travel i.e. operations, support for operations, training for operations, welfare etc have been removed where possible.
 - b. Road travel consists of administrative businesses car journeys in either (1) a leased fleet vehicle; (2) personnel using their own personal car (grey fleet); and (3) hire cars
 - i. Leased fleet vehicles: This data includes some non-business administrative use because it not possible to separate out all journeys. Calculation of the lease fleet

emissions are estimated based on an average mileage of 18,000 miles per car (from sampled data) multiplied by the average CO2 emissions of all the vehicles in the fleet.

- ii. Grey Fleet includes travel by civilian and Armed Forces personnel using their own cars. Emissions are calculated using an “average” car from the DEFRA GHG conversion factors and the motor mileage distance claimed.
- iii. Hire car fleet emissions are based on an estimated journey of 250 miles per hire (based on sampled data) and DEFRA Greenhouse Gas Conversion (GHG) factors for the size of vehicle hired. If a vehicle type is unavailable any upgrade is not recorded.
- c. Rail travel. We monitor rail travel mileage booked centrally using the mandated contract. The emissions data is calculated for all journeys but we are able to exclude travel related to armed forces recruitment.
- d. The travel data is from live databases. The data is correct on the date the report was made and cannot be replicated.
- e. The data given is for commercial air travel, it does not include:
 - i. Military aircraft or
 - ii. Charter aircraft i.e. used for troop transport.
- f. The travel data includes travel by MOD civilians, Armed Forces personnel and the Trading Fund Agencies (Defence Science and Technology Laboratory; UK Hydrographic Office and Defence Support Group).
- g. The number of UK domestic flights includes journey that start and finish in the UK. Domestic flights for onward connection to international flights have not been included.

11. **Waste**

- a. Waste data shown is against the agreed GGC baseline, this is around 75% of MOD known waste. The 25% excluded is unreliable data because:
 - i. the waste contractor does not provide weighed waste data. The current contracts were signed before weighed waste data was required
 - ii. sites have insufficient manpower to monitor waste and estimate tonnage based on volume.
- b. The waste data is from weighed waste data and volumetric conversion factors. Volumetric conversion estimates the weight of the waste based on the type of waste and size of the skip.
- c. The waste data excludes the scrapping and recycling of ships. Ship recycling is not a regular occurrence and their large tonnage would adversely slew figures in either the baseline or the reporting year.
- d. The 10/11 waste data excludes the disposal of the Nimrod aircraft fleet. This was a one-off exceptional disposal. We have included disposals that are part of fleet upgrade/replacement i.e. Hercules c-130 aircraft and truck fleet replacement.
- e. Waste data covers the UK, Trading Fund Agencies and sites in Germany.

12. **Water**

- a. Water is provided by Aquatrine, an MOD-wide Water and Wastewater PFI project delivered through three separate contracts known as 'Packages'. Package A covers the Midlands, Wales and South West England, Package B covers Scotland, and Package C covers the North and East of England. Aquatrine provides water to over 4000 site groups, which is approximately 90% of the Department's consumption.
- b. The Department's office estate (administrative buildings that are not part of a military establishment) is relatively small, being 13 sites. The full Time Equivalent (FTE) is the number of personnel established at these sites and does not include (1) on site contractors and (2) visitors (MOD/Armed Forces personnel based elsewhere, public and other contractors).