Department
for Environment
Food & Rural Affairs

Greening Government ICT

2017/18 annual report

January 2019

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Executive summary

Green ICT is a slight misnomer for the work and progress presented in this report as the scope covers the triple bottom line of our activities. Future reports will be titled the Sustainable Technology Annual Reports. However on the traditional agenda, it is true to say that across government we have delivered a huge reduction in individual energy footprint (Average footprint is 891kwh/staff but this has reduced considerably from the baseline figure of 1467 KWh/staff) through the increased delivery of 61% of the identified best practices presented in Annex A.

The ICT Estate has become more energy efficient as departments have moved into service provisions driven by Cloud First and Digital Policies. Therefore the energy impact of government ICT has moved from government estates to those of with our service providers. A further consequence of this transformation, coupled with the smart working agenda is that end user device allocation across government has increased. This results in an increase in ICT end user footprint and waste that now exceeds 1.2Million kg, with an increased energy demand across networks, telephony, audio visual and imaging.

39% of the best practices are undelivered, or in progress. These can be considered as softer skills that aligned with the delivery of the core ICT enable the reduction in environmental and social impact. They also help meet wider government agendas and obligations like the greening government commitments of the UN Sustainable Development Goals. These areas require focus. .

In order to meet this wider remit and current challenges the newly published Sustainable Technology Strategy 2020 meets this challenge through the recognition and measuring of governments ICT impact in a services world. It provides best practices and guidance to support the delivery of Sustainable ICT within Government Spend Control Processes and challenges departments to focus on areas for improvement through the delivery of a departmental Sustainable Technology Strategy Statement, progress of which will continue to be reported on annually.

Introduction

During 2017/18 departments continued their journey towards using more sustainable digital services, technologies and best practices, ahead of the new 2020 Greening Government; Sustainable Technology Strategy. This follows on from the change in reporting in 2015/16 towards the delivery of best practices and therefore tangible outputs. This enhances the building blocks of policy, strategy, skills resource and processes that constituted the previous maturity models.

This year's reporting is directly aligned to the key programme it is supporting and enabling; the Greening Government Commitments 2016-2020. The sections are designed to show how the achievement of each of the GGC targets , Waste, Sustainable Procurement, Paper, Travel and Energy have benefited through the delivery of sustainable ICT. Water has however been excluded because in terms of GGC measurements for water use on government estate there is currently minimal ICT impact except for isolated data centre cooling. This area will be investigated under the new Strategy.

In addition there are several commitments from other cross-government programmes that the sustainable ICT agenda is seeking to engage and support. These include:

- The Cabinet Office/Government Digital Service (GDS) Digital by Default and Ways of Working programmes require departments to use new digital tools, channels and services if they are to deliver the changes sought to more sustainable and cost-effective ways of working;

- The GPU Estates programme is seeking a significant reduction in use of expensive office space and a move to regional hubs in which organisations will share office ICT services such as networks, gateways, print and meeting room services including booking, and video conferencing, whilst retaining access to their own organisation digital services.

- The GDS Technology Code of Practice (originally published August 2016 and updated in 2018) which sets out the conditions for departments to meet in purchasing digital services and technologies to ensure cost-effective, sustainable, flexible and secure services and technologies. Compliance with the Greening Government ICT Strategy, is included within conditions 5, 8 and 11. It is the role of the GDU to provide the guidance and best practices in that Strategy to enable departments to procure services and technologies with minimal sustainability impacts through the spend control process.

This report:

- Conveys the highlights from departments 2017/18 assessments of progress in reducing any negative sustainability impacts their digital services and technologies.
- The work done by the GDU throughout 2017/18.
- Identifies areas where departments remained challenged in adopting best practices to reduce the sustainability impacts of their technology services.
- Sets out broadly the direction for towards meeting the new 2020 Greening Government; Sustainable Technology Strategy.

In total 14 departments/agencies have been engaged in this process of which 12 provided best practices returns, 13 provided ICT energy footprints and 11 provided ICT waste figures. The variation can be accounted for by the number of different stakeholders across departments that need to be contacted in order to the complete returns, In some

organisations this can be a single point of contact in other larger departments this can be more of a challenge across multiple tiers, industries and agencies.

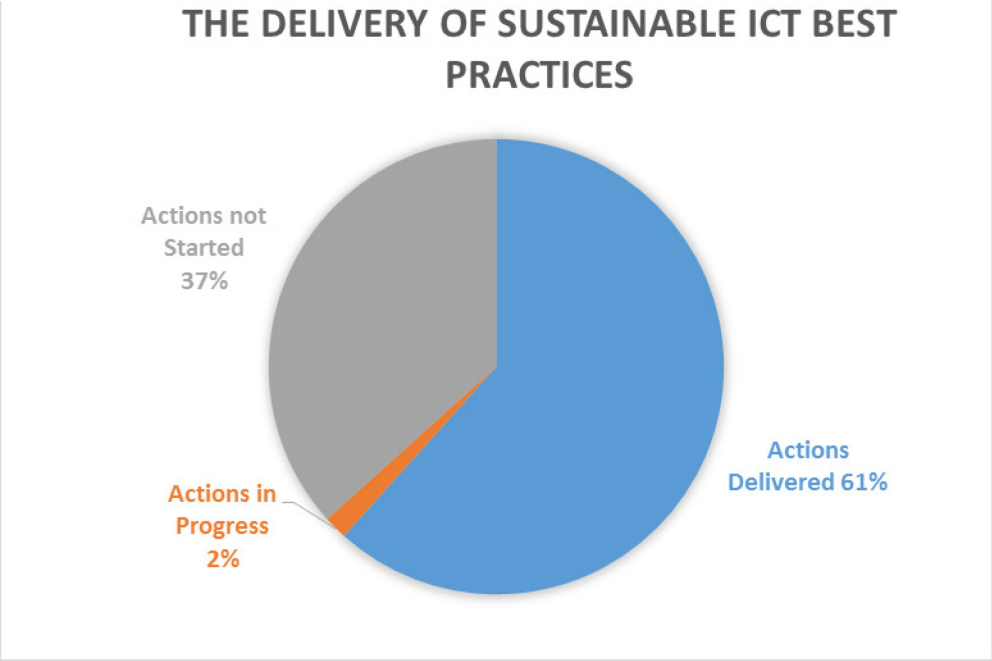
Best practices

Departments continue to strive for the most efficient and effective ways of implementing best practices and use of technology across the three sustainability pillars. Best practices have also been widely accepted for benchmarking and represent outcomes of repeated and contextual actions.

Key Highlights;

- 12 Departments/Agencies provided best practice returns – the same number as last year
- 37/60 (61%) of the identified updated best practices have already been delivered, which is an increase of 4 on last year

Figure 1 - Best Practice Delivery



Overall the adoption of best practices has seen a year on year improvement since 2016 with departments delivering an increasing number of sustainable ICT actions and activities that are providing real benefits. This year a total 60 best practices have been identified and can be viewed in Annex A. Looking across government 63% of these have already been delivered or are in progress.

The types of activities being delivered and reported on vary across government. Reported activity has been focussed on energy saving and waste reducing activities that could also be classed as Estates based activities. These include actions on reducing the legacy data centre estates and minimising paper use. Less focus seems to have been placed on activities that could be classed as services, for example, sustainable procurement or waste data once taken by the contracted firm. Figure 2 demonstrates this, the scores are allocated for the delivery of best practices with higher scores allocated for the delivery of best practices. It is worth noting that the number of activities is not equal for each category, it is however true to say that several departments did report a lower percentage completion of best practices against Waste, Travel and Sustainable Procurement.

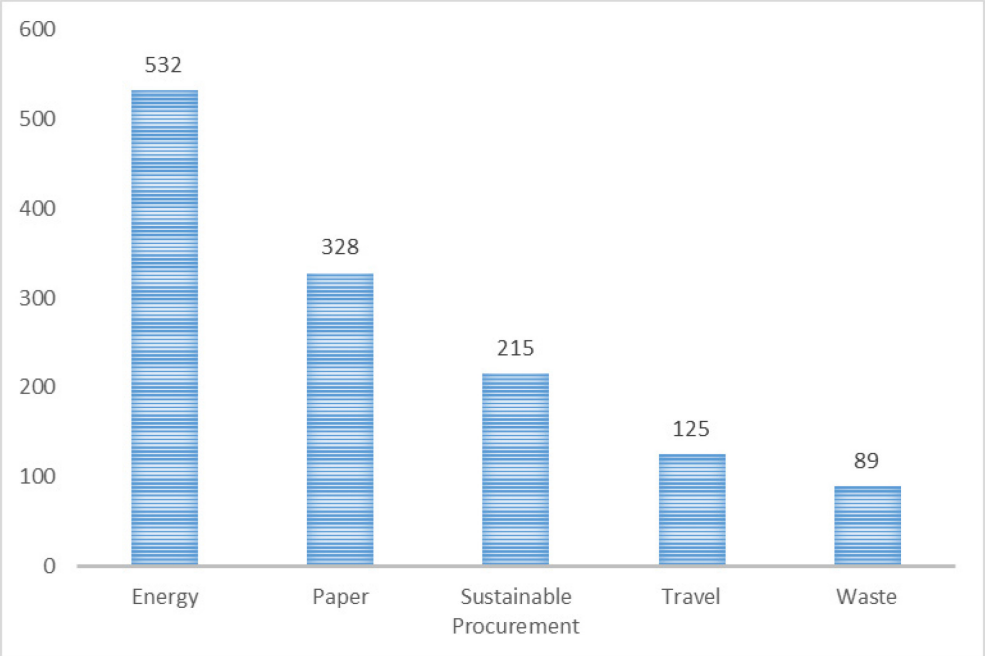


Figure 2 - Best Practice Categories

Delivery of these best practices varies across departments and organisations but this is also a lot of consistency. Figure 3 demonstrates overall performance.

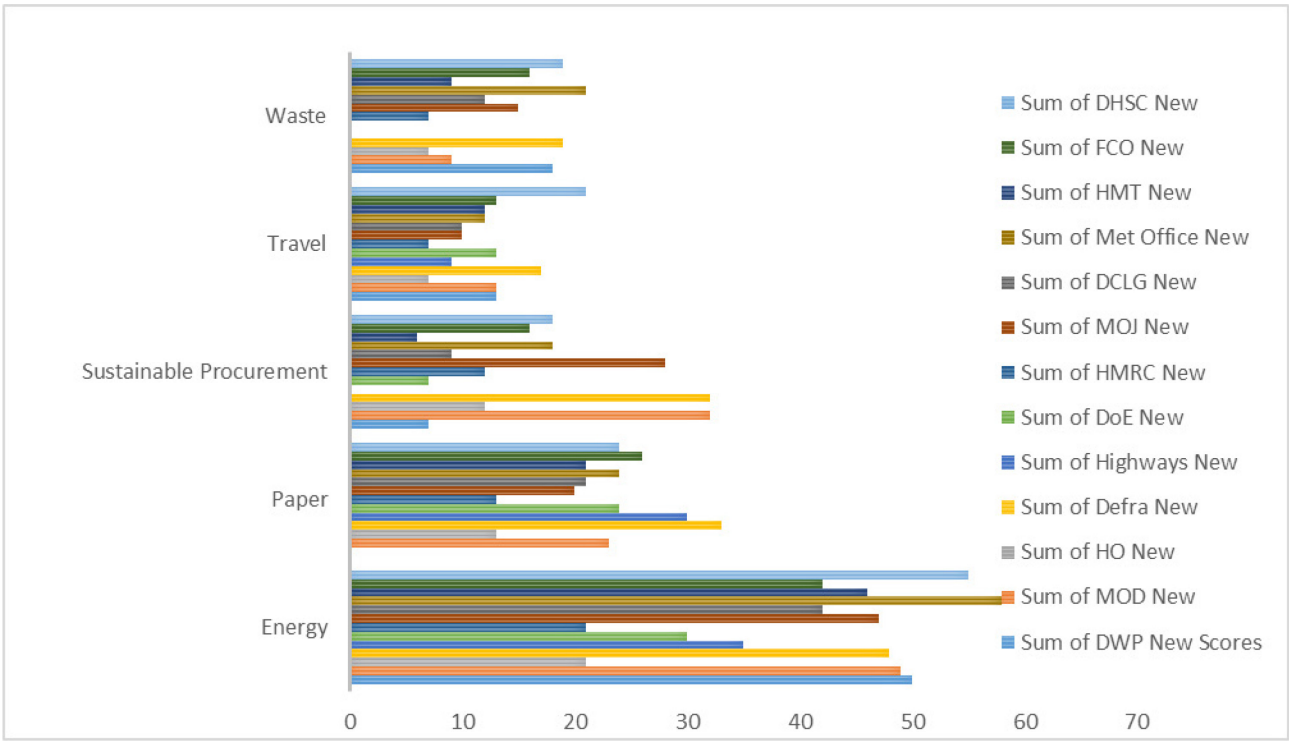


Figure 3 - Departmental Performance

Energy

This is the seventh year that the GDU has gathered figures for the IT operational energy footprint. This is the assessment, if not measurement, of the energy taken to run our IT. The GDU again used the tool developed with the Joint Information Systems Committee for Higher Education (JISC). We asked that returns also included, where possible, data from externally hosted data and cloud providers in order to gain as true a picture as possible.

Key highlights

- 13 departments/organisations refreshed their footprint figures, the same as last year.

- The assessment covered an additional 87k staff in comparison to last year taking the total above 500k.
- Average footprint increased from 856kwh/staff to 891kwh/staff but this has reduced considerably from the baseline figure of 1467 KWh/y
- Power consumption of servers showed the greatest reduction as Government ICT moved to Cloud, or co-location providers, but all other categories increased.
- End use assets showed the largest of these increases.
- Returns from 1 department have been carried forward to provide a comparable assessment to last year's.
- Conversion factors have been updated to the latest figures

A view often levied at Sustainable ICT work is that we are "getting greener by default" and while the statement does hold some truth is certainly does not tell the entire picture. "Cloud first" and Digital agendas, policies and strategies have led to the closure of legacy and often inefficient, on-premise data centres and into often more efficient cloud, private cloud or co-located datacentres. You can clearly see this progress through the data in Figure 4. Over the previous four reports the energy being reported from servers alone has dropped significantly as a proportion of the energy use per member of staff across the civil service from over 50% to around 30%. The other side of this coin though is that firstly the energy use data is being included ad-hoc in departmental returns when the hosting is not on site and secondly, notice the universal increase across the other categories. This indicates that areas for focussed activity should heavily be in the procurement space i.e. with whom we do business and how much kit we are buying and using and less so in the energy consumption of the equipment we are purchasing/leasing.

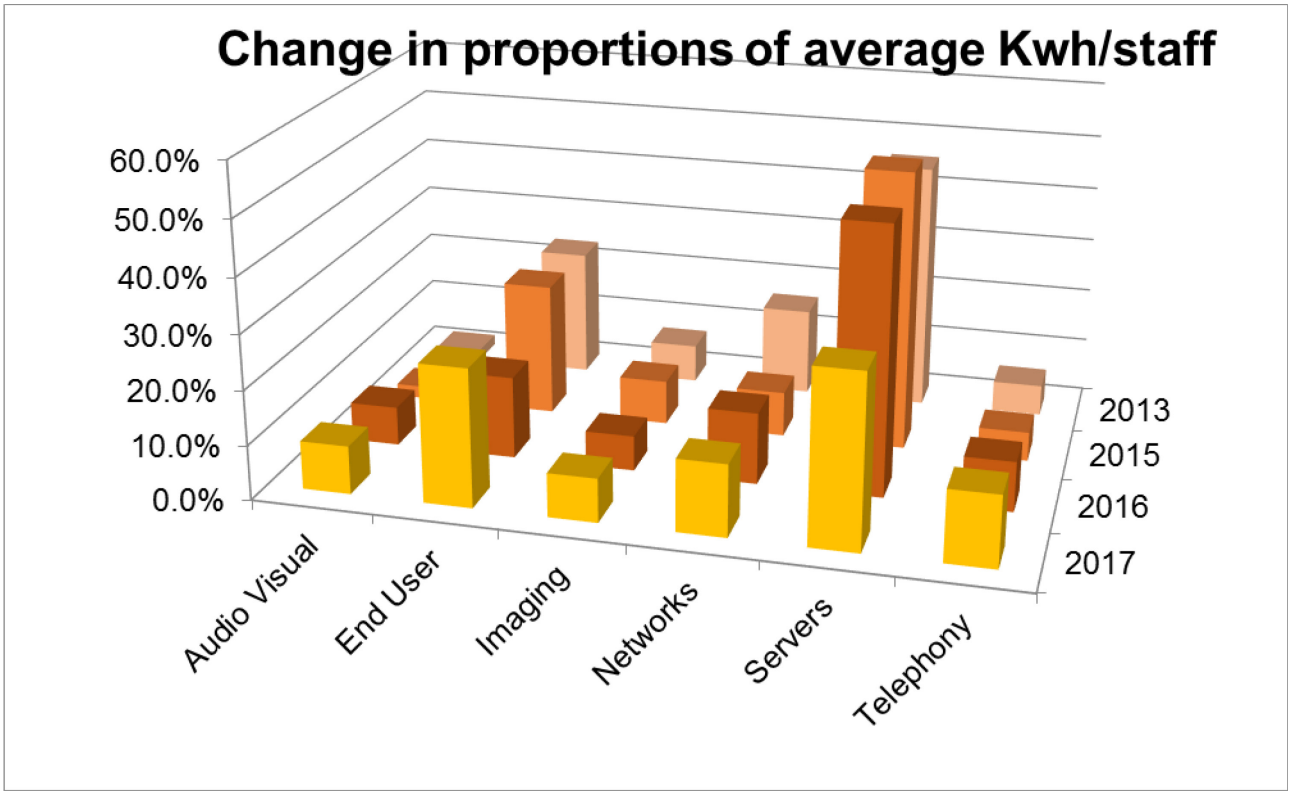
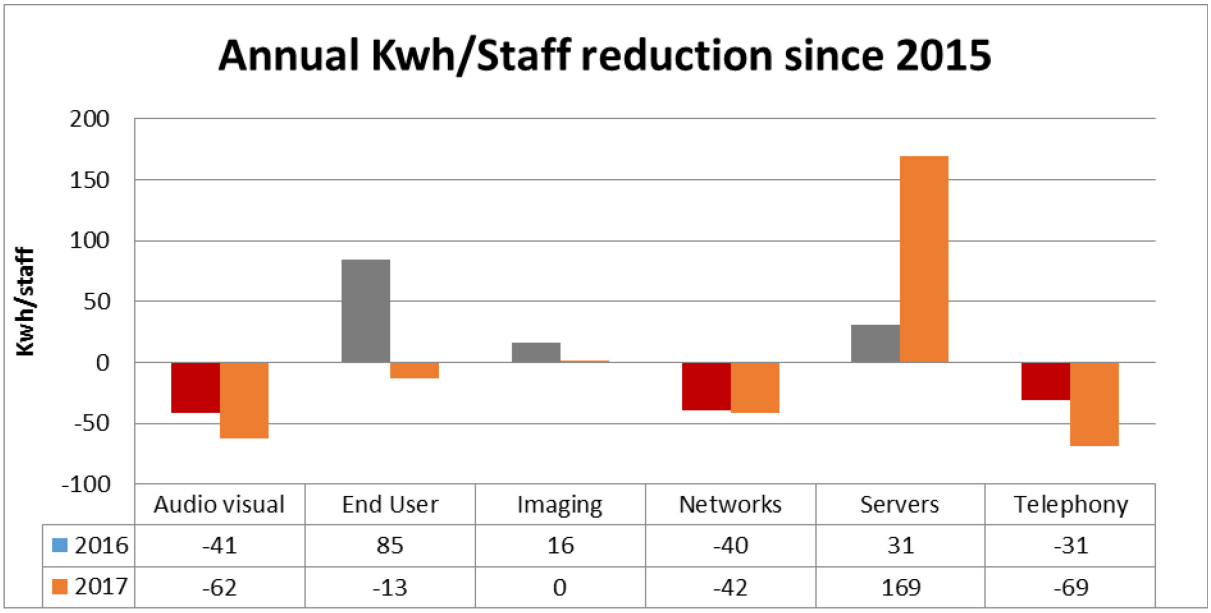


Figure 4 - Energy Use Proportions

To demonstrate this footprint change further, previous annual reports have provided a chart that shows energy reduction across the categories. Figure 5 therefore looks slightly topsy-turvy as it was designed for a series of savings but instead represents negative values as the footprint increases across end user devices, audio visual, telephony and networks with the only reduction (positive bar) on server footprint. However, as previously described this is perhaps a misleading chart as the footprint from externally hosted data is largely not included in the data. The 169KwH saving recorded for servers is roughly equivalent of running a single desktop PC for a year (for each and every civil servant).



	Audio visual	End User	Imaging	Networks	Servers	Telephony
2016	-41	85	16	-40	31	-31
2017	-62	-13	0	-42	169	-69

Figure 5 - Savings across footprint categories

Data consistency across the categories has always fluctuated but in 2017 a high figure in excess of 500,000 users has been recorded across all the sections as shown in Figure 6. This increase can be partly translated as the increase in civil servants recruited to assist with EU Exit activities. Please do note these figures do not capture consultants and industry staff working on HMG premises.

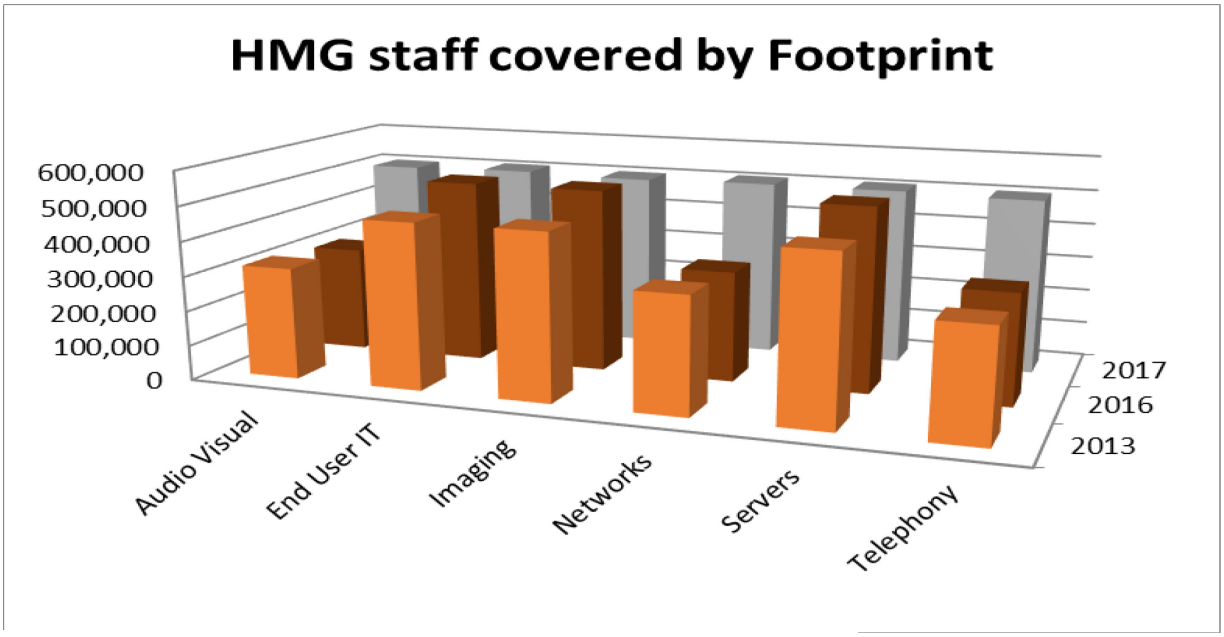


Figure 6 - Data Consistency

Waste

The GDU conduct annual reporting on the ICT waste collected across government and how it is handled and ultimately disposed. It goes above and beyond the Greening Government Commitments waste reporting in that it identifies waste types, and breaks down in finer detail how each element is extracted.

Key highlights for 17/18 are;

- 11 departments/organisations submitted statistics, five more than last year.
- 2.09% to landfill, +0.66% more than last year, but roughly consistent.
- Generated £63k income for departments, an increase of £3k this year.
- Overall total items collected was approximately 50% more (c600,000kg) than last year totalling more than 1.23m Kg of ICT waste.

The approach by departments varies across government. All departments contract out with some paying for disposal then receiving a rebate on value reclaimed from the raw materials and rare earth elements, some allow the waste to be taken for free leaving the contractor to reclaim any costs through resale, and some others offer a mixture of the two. What is clear is that there isn't a consistent view or process and with the amount of waste exceeding one million kilograms there is potentially an opportunity for government to adopt a smarter and perhaps more lucrative approach. Figure 7 provides this data in full.

Summary Description	Quantity	Weight (KG)	Percentage
Total items collected	**79188**	**1232801.43**	**100.00%**
Donation i.e. MAR	**3133**	**2187.99**	**0.18%**
Items for commercial sale	**83099**	**486021.43**	**39.42%**
Sub total of items re-utilised	**57877**	**594209.42**	**48.20%**
	2487	**0**	
Total items for recycling	**21311**	**638592.01**	**51.80%**
Hazardous	**3787**	**24708.29**	**2.00%**
Total of items/materials for reclamation	**20179**	**158531.22**	**12.86%**
Reclaimed materials from waste items	**2765**	**132792.76**	**10.77%**
residue of unrecyclable materials for landfill or incineration	**17414**	**25738.46**	**2.09%**
total percentage by weight of materials reused or reclaimed			**97.91%**
Total Revenue generated through re-marketing/selling of assets in 16-17			**£62,795.32**

Figure 7 - Waste Data

Examining the data a little further in Figure 8 reveals the largest amount of ICT waste recorded to date. This reflects government ICT transformation programmes towards smarter working and cloud provision for data hosting as we move to mobile devices and hosting services. The low figures for sale/charity are likely largely driven by the high percentage of MOD data (c50%) that constitutes these figures where security is a primary concern. The slight increase since 2015 is possibly at odds with the general move towards service provision. A circular model of ownership would reduce waste figures from a Government Estates perspective.

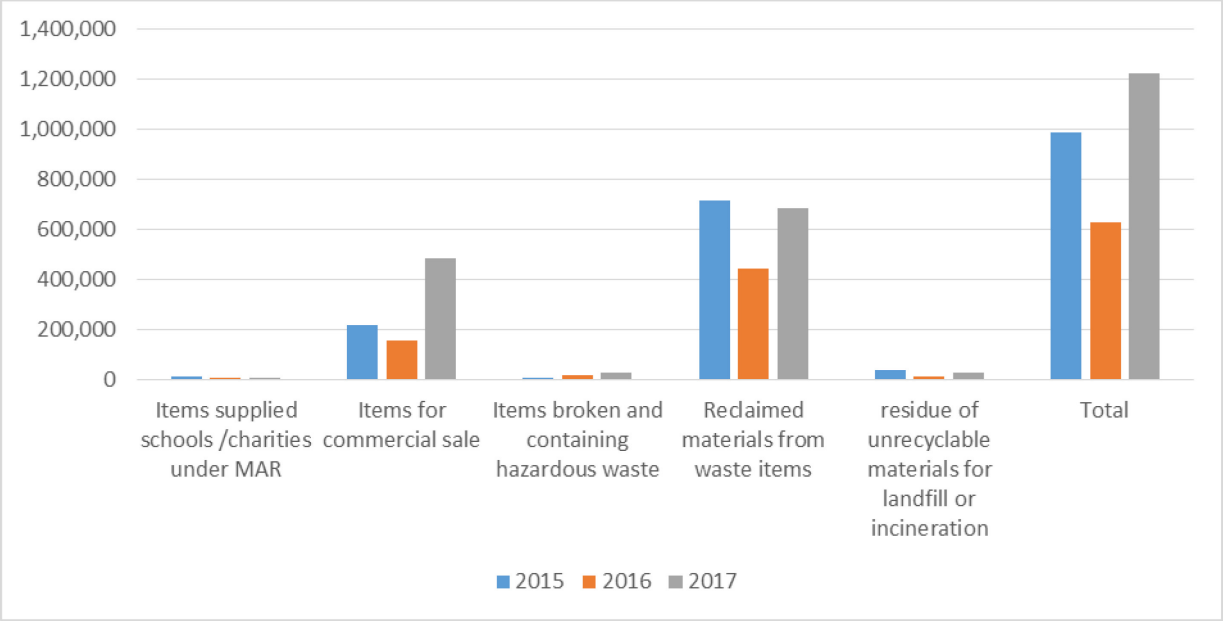


Figure 8 - Waste Data Analysis

Travel

For many years now the provision of connectivity services has been a focus for delivering the technology for sustainable ICT but as has been the message since day one, "*it is not just what and how we buy the ICT but how we use it*". This year's reporting provides some striking results when examined pan-government. The sub-categories for travel are E-Conferencing and Behaviour Change and Figure 9 demonstrates the results showing the provision of the equipment but not necessarily the training to reap the benefits.

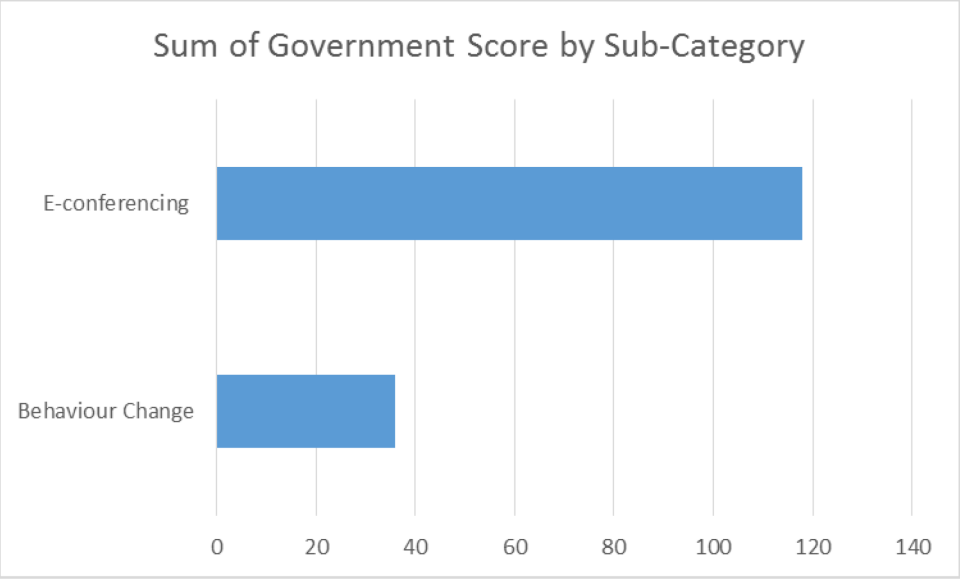


Figure 9 - Travel Sub-Categories

To break down the results a little further Figure 10 shows how some departments are scoring against the best practices, the majority are not for behavioural change. This is likely to be as budgets for ICT and Estates matters have historically or typically been separate. However with data now freely available from e-conferencing providers on volume and location of calls there is another clear opportunity here for cost savings from travel budgets and provision of equipment suitable for more flexible working. The bars coupled with a

small orange bar are to be considered as business as usual across government, those without are work in progress.

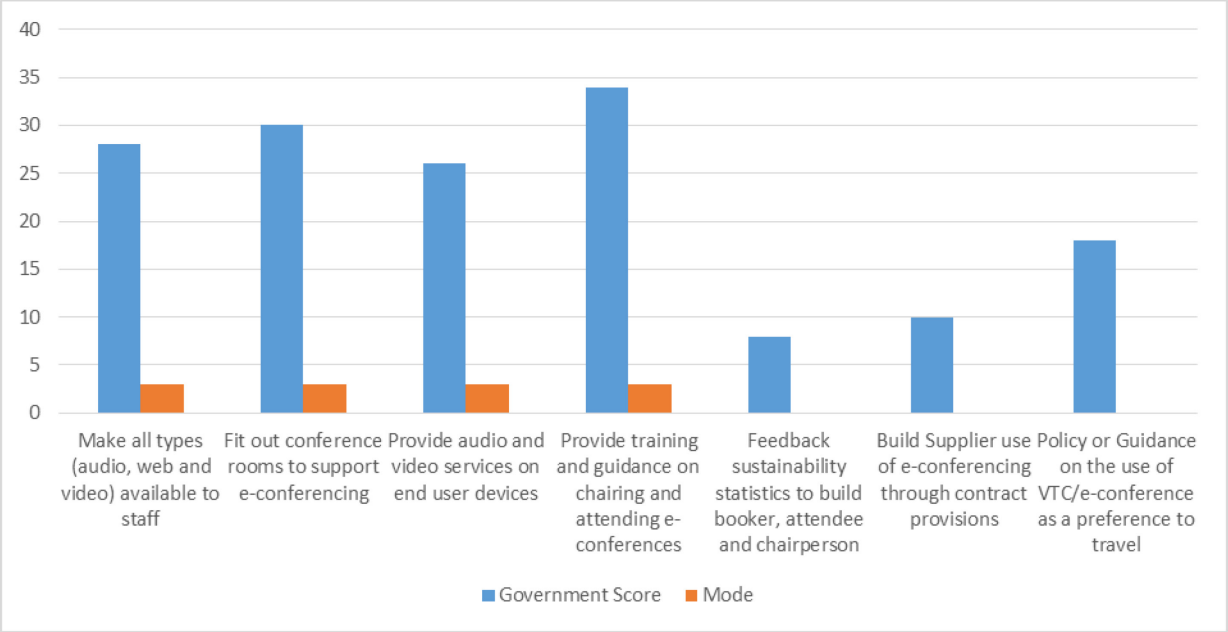


Figure 10 – Travel Best Practices Scores and Mode

Defra's Smarter Way of Working through the UnITy Programme.

Our connectivity services will underpin the end-user device and applications that are enabling DEFRA's digital transformation to become a more agile and efficient organisation, enabling people to work in fundamentally different ways and without having to travel by default. The majority of these services will be cloud based, reducing the overall carbon footprint by consuming service from pre-built shared cloud services. Fully integrated fixed to mobile Unified Communications and Collaboration users from our market leading VONE-C cloud communication service with over 18,000 conference calls and WebEx's per month allowing people to collaborate real-time via audio and web

Paper

A pattern starts to emerge when you also examine the paper data. Many of the traditional paper saving activities are around a technological solution, i.e. a managed print service (MPS). An MPS can of course help as it gives you much greater control over the service

you are providing and easy access to data from the usage across your estates. However this is only going to reduce paper if it is coupled with user education and training on paper-free working using collaborative tools and well as clear goals for reducing the printer estate. Figure 11 clearly demonstrates how the technology solutions are being rolled out almost universally across government but the behavioural best practices are lagging behind. It would be reasonable to point towards the paper savings recorded across departments through the GGC's as success however the GDU reporting shows that these savings have been made from departments digitising their internal and external processes rather than necessarily tackling paper usage in the back office.

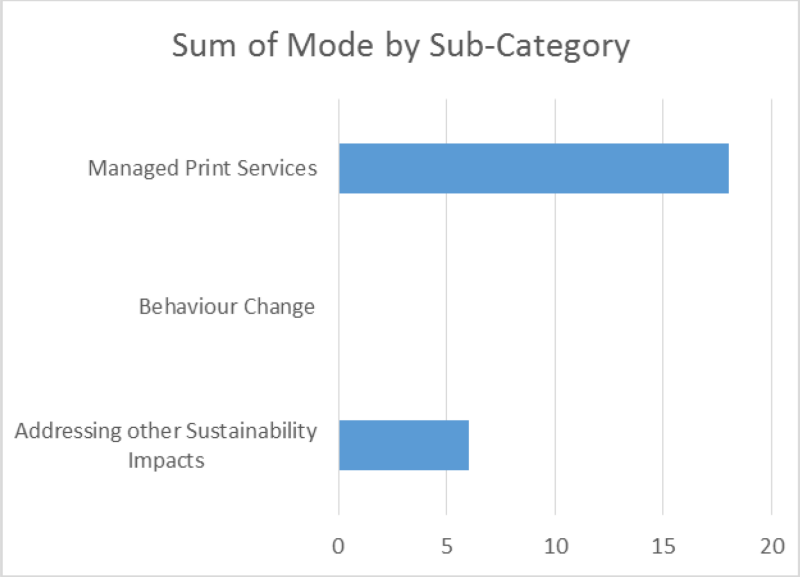
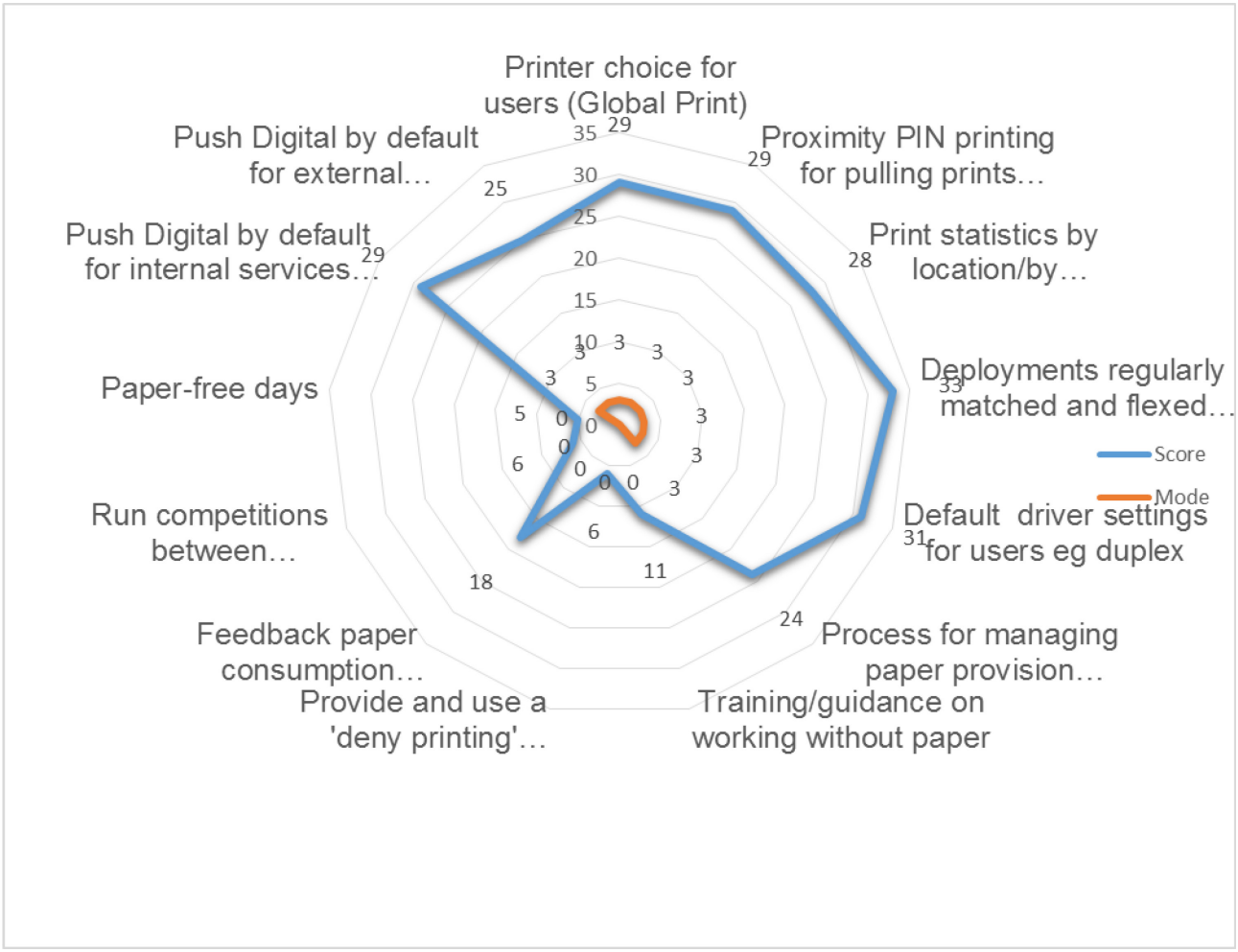


Figure 11 – Paper Reduction Sub Category Scores

The preference for technology above behaviour is better demonstrated in figure 12. With the exception of paper usage statistics being feedback (likely due to GGC reporting requirement) the remaining best practices remain largely unexplored across government. For those departments without a primarily external facing element such as MOD, the behavioural aspects will be key to meeting the 50% reduction targets.


Printer choice for users (Global Print)
Proximity PIN printing for pulling prints…
Print statistics by location/by…
Deployments regularly matched and flexed…
Default driver settings for users eg duplex
Process for managing paper provision…
Training/guidance on working without paper
Provide and use a 'deny printing'…
Feedback paper consumption…
Run competitions between…
Paper-free days
Push Digital by default for internal services…
Push Digital by default for external…
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Mode

Figure 12 - Paper Best Practices

Defra's Sustainable Print Solution through the UnITy Programme.

Defra will be deploying all new printing devices standardising to just 3 models. The approach of standardisation, is expected to deliver circa 50% Carbon Footprint reduction to the Authority through device optimisation, new energy efficient technology and variable power-mode settings. The minimisation of models all with the same user interface will provide the benefit of the same improved user experience across the Authority to ensure wasted printing is minimised due to unfamiliarity. The solution stores jobs sent to print for the user to collect from the device when they are ready. This ensures confidential documents cannot be left lying around and prevents uncollected printing from being partially or fully disposed of by accident. This also ensures that what is printed is only exactly what is requested and waste is always minimised. This process is expected to reduce the Defra's print estate by approximately 300 devices. These new devices hold multiple certifications for environmental performance such as ENERGY STAR,TCO, EPEAT, EcoLogo and Blue Angel. The length of time devices are in low power modes can accurately be measured and reported to provide true energy consumption data. Currently 98% of all returned consumables can be reused. Defra's new supplier is commitment to Sustainability and will ensure that many deliveries are completed by electric vehicles in city areas.

Sustainable procurement

Sustainable procurement is a growing area of interest and importance especially when thought of in terms of mitigating supply chain impacts or the effects of climate change. However the results in figure 13 show the area as a whole is still in its infancy in Government Procurement. Just 3 of the 12 (columns with the orange tip) identified best practices can be considered as business as usual across government. These are adoption of the Government Buying Standards, Fair working patterns for suppliers/support and risk assessments for ICT services. The remainder are not as well adopted. However as more ICT procurement occurs through Crown Commercial Services (CCS) frameworks, many of these will be picked up as they are included in either the standard T&C's, the call off mechanism, or the model service contracts. A further factor in these results was the availability of the data from commercial teams within departments/organisations.

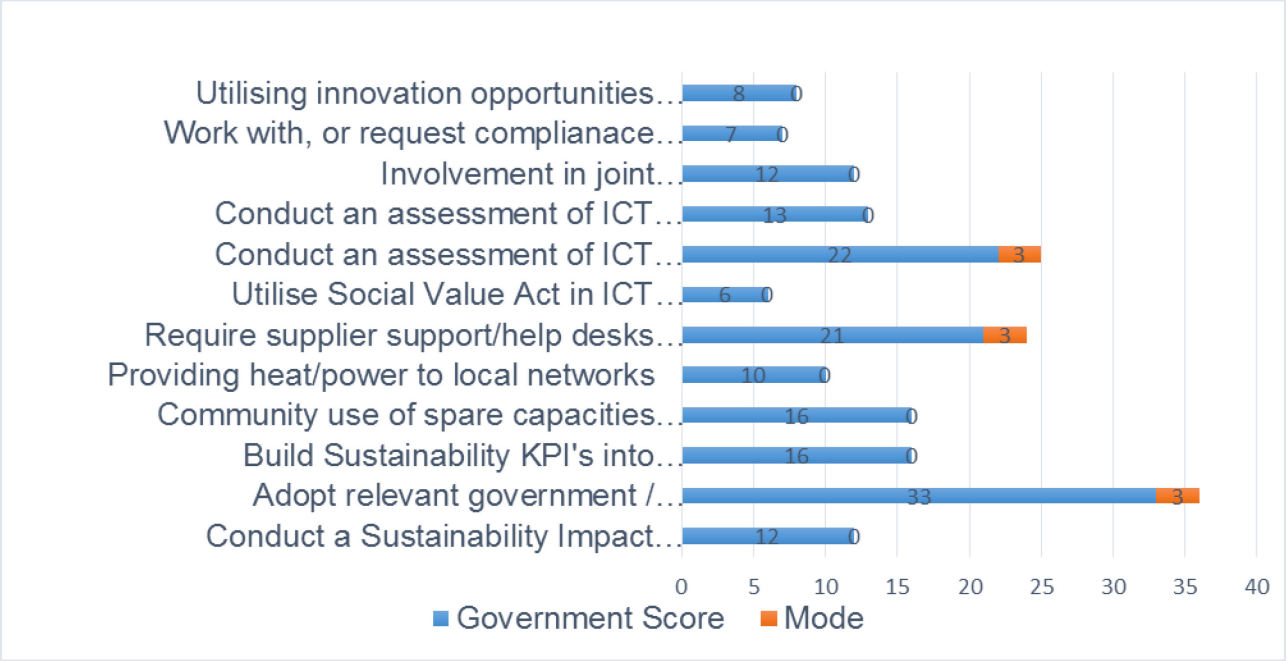

Figure 13 - Sustainable Procurement

Supporting government agendas - smart working, estate rationalisation and digital.

Almost half of the 60 best practices are related to what is now called Smart Working and are the kind of activities championed through The Way We Work (TW3, PAS3000) government Programme. These activities are shown here to be the clear winner under the Sustainable ICT banner of activities representing almost 50%. A top possible score is 39, and the two items almost universally practiced are to do with low power modes for devices. Only 4 best practices are partially adopted and these are around training, policy, data and commercial. In terms of supporting the GGC's the activity is largely weighted to energy savings and travel as workers are encouraged to work remotely.

Figure 14 - Smart Working Best Practices

Defra's new Hosting Services - UnITy

The new UnITy programme for hosted IT services will bring some key sustainability benefits over the term of the agreement. The five current data centres are being consolidated into two, which are being upgraded to provide highly energy efficient hosting. As well as improving hosting, the servers will be enclosed in smart aisles, meaning that not only is airflow controlled, but only the necessary amount of cooling is delivered. The Defra hosting space within both data centres will be operating to Tier-3 standards. Overall, we anticipate a reduction in energy consumption in excess of 50% during the course of the agreement and corresponding reductions in atmospheric emissions. To monitor progress, a sustainability dashboard is being provided as a standard part of the services. Customised to meet the needs of Defra, the dashboard will provide energy and emissions analytics in a flexible way never before possible. This will help to identify further opportunities throughout the term of the agreement to identify and deliver more improvements. There will also be new insights into materials usage within the estate, waste and packaging. Finally, to support circularity principles, the dashboard will also provide information regarding supply chain and equipment disposals.

The Ministry of Justice Transformation programme

The MoJ National and Smarter Working programmes are two of nine cross-cutting work streams helping make MoJ Transformation a reality. A major milestone has been reached as staff have started working in two new locations, South Colonnade in Canary Wharf and Wellington Place in Leeds. South Colonnade is the latest addition to the Government Hubs Programme. MoJ joins seven other government departments, each with their own floors. The Wellington Place development is the location of the future Leeds Government Hub. Both buildings have undergone extensive fit-outs to create modern, collaborative work spaces that will facilitate smarter working. GovWifi is installed and used as standard. In South Colonnade, a common IT service is provided by the Government Hubs Team, providing connectivity for the building services and Hub IT shared services such as GovPrint. The target is to work to a ratio of 6 desks for every 10 people. Staff have access to a suite of digital tools to enable this, such as Skype for Business, Office 365, OneNote and OneDrive, promoting a reduction in travel and paper use.

Moving forwards

For the future the GDU will continue to support departments in improving the sustainability of their technology through to 2020. As well as sharing assessments and case studies, the

group has met four times during the year and have developed the new Greening Government; Sustainable Technology Strategy for 2020. This will support central government programmes and give clear guidance to departments on how to reduce the sustainability impacts of their digital services and technologies

Updating the Greening Government: ICT Strategy 2011 this new strategy commits departments to a continuation of calculation of their ICT energy footprint (including services) and delivery of best practice until 2020. Recognising the increasing complexity and risk associated with our technology services and supply chain it seeks a **"measured improvement in the environmental, societal and economic impacts of Digital and Technology services and assets by 2020 with deployment of a repository of best practices with identifiable/measured contributions to wider Greening Government commitments and to improved more sustainable ways of working for staff organisation and customers**". Essentially "*Sustainable Technology for Sustainable Government*".

The Sustainable Technology Strategy addresses 3 key challenges:

1. To describe how government best procures and exploits information and communications technology services for Sustainability through the provision of published guidance setting minimum sustainability standards for our service providers.

2. To provide evidence that delivery of Sustainable ICT is a key enabler to government transformation programmes, plans and commitments and wider government imperatives supporting the transparency agenda

3. To provide a guiding view of how government can meet the sustainability challenges and opportunities provided by digital technologies and digitalization

All the aforementioned materials are published through the Technology Code of Practice and/or a government wide collaborative shared working area

This change in approach to contracting ICT services requires the GDU to shift its focus from just aiding departmental procurements to also working with Crown Commercial Service (CCS) to deliver more sustainable ICT services through engagement in its framework and G-Cloud refresh activities.

With the efficiency agenda impacting the whole public sector, the GDU will continue to reach out to engage with the wider Public Sector to enable other public sector organisations to reduce their sustainability impacts and achieve improved efficiency through use of ICT and digital services. It will look to pass on its skills and experience to help other public sector staff improve their awareness of the sustainability and efficiency opportunities from using Technology and Digital services – exploiting further their legacy estate as well as moving to use new digital, more sustainable services.

MOD Paper Free February Campaign

Information Systems and Services (ISS) delivers information capabilities to the UK MOD at its sites across the world. During the 12 months to January 2018, it used approximately 3 million sheets of paper. In February 2018, the ISS Design Strategy Sustainable ICT team launched a “Paper Free February” initiative to demonstrate how the tools already available through the corporate IT system MODNET, of which Microsoft Office 365 is an integral part, can help reduce paper consumption. Crucially, the pilot sought to understand why people needed to print and identify barriers to paper reduction (eg access to information away from one’s desk, policy obligations and reviewing complex documents).Through a combination of simple changes to ways of working and a general awareness programme encouraging people to “think before you print”, an office of around 80 people saved nearly 3,000 sheets of paper in four weeks. The same success, replicated across ISS HQ, would equate to a saving of approximately 1 million sheets, equivalent to a 33% reduction, if these cultural changes could be embedded into business as usual.

We thank government officials that provided important insight and endorsed the report, in particular:

Adam Turner Defra

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Rudi N GCHQ

Suzi Cooke Highways England

Dave Baldwin MHCLG

Diana Green HMRC

Elaine Palmer-Wilkinson EA

Darren Evans Highways England

Francesca Livesey CCS

Nicholas Gorton DWP

Heidi Aulamo Highways England

Ian Gadsby DFT

Hannah J DFID

James O'Neill Cabinet Office

Patrick Kt DFID

Leticia Agostino DFE

Alan Mackay Met Office

Mark Stockwell MCGA

Maureen Pamplin HMRC

Nicola Badley CCS

Norman Hawkins DFPNI

'Philip Whitley Scotland Government

Richard Graham Cabinet Office

Sarabjit Jagpal HM Treasury

Steve Dunthorne CPS

Sue Morris HM Treasury

Victoria Pittman MOD

Willcox Wayne GCHQ

Ian Holford GCHQ

Ben Tongue NHS

Kenny Patrick DFID

Vicky Tonks HMRC

Peter Mcardle NHS

Sarah Galal MOJ

Eleni Pasdeki-Clewer NHS

Adrian Treharne HO

Alice Swinburn NHS

David Hawken MOD

Isabel Hunt NHS

Mark Stockwell MCA

Graham Scott HMRC

Alexis Percival NHS

Annex A – A list of identified best practices

GGC (In Support of)	Contributing Digital/Technology Service	Best Practice

Energy	Changes to the Ways We Work	Low power modes enabled for devices and accessories
Energy	Changes to the Ways We Work	Devices allocated/chosen based on user needs minimising device proliferation
Energy	Changes to the Ways We Work	Low power modes enabled for devices and accessories
Energy	Connectivity	Raise server room temperature to highest permitted by devices installed
Energy	Connectivity	Participant in EU Code of Conduct for energy efficient data centres/ compliance with Cenelec standard CLC/TR 50600-99-1(lists same best practices as the CoC)
Energy	Connectivity	Adoption of CoC mandatory practices for Participation
Energy	Connectivity	Adoption of CoC desirable best practices
Energy	Connectivity	Endorser of the Code of Conduct to supply chains
Energy	Connectivity	Virtualisation of applications
Energy	End User Services	Consolidation programme to maximise use of capacity
Energy	End User Services	WIFI enabled buildings to support hot desking
Energy	General good practice	Agnostic office gateways to enable multi-organisation occupancy
Energy	General good practice	Gateway for home ISP connections
Energy	On-site server/comms rooms	Able to work outside the office and home using other WIFI networks

Energy	On-site server/comms rooms	Removal of PABXes and hand-sets as result of eg Unified comms/VOIP programmes
Energy	On-site server/comms rooms	Network suppliers are participant in EU CoC for energy efficient Broadband
Energy	On-site server/comms rooms	Move from having my own desk to hot desking across my organisation's offices
Energy	On-site server/comms rooms	Use of collaboration tools for sharing and working on content such as Sharepoint, Google docs
Energy	On-site server/comms rooms	Guidance/advice/best practice available to support staff working at home
Energy	On-site server/comms rooms	Devices switched off or reverting to low power modes when inactive for pre-set periods of time
Energy	Print services	Devices no longer in use are disconnected
Travel	E-conferencing	Make all types (audio, web and video) available to staff
Travel	E-conferencing	Fit out conference rooms to support e-conferencing
Travel	E-conferencing	Provide audio and video services on end user devices
Travel	E-conferencing	Provide training and guidance on chairing and attending e-conferences
Travel	Behaviour Change	Feedback statistics to build booker, attendee and chairperson awareness of the carbon and energy footprints for different types of meeting, including

		the GHG emission comparison between Face to Face and e-conference meetings
Travel	Behaviour Change	Build Supplier use of e-conferencing in preference to face to face meetings through contract provisions, and include provision of statistics on supplier employee travel distance and modes, and consequential GHG emissions
Travel	Behaviour Change	Policy or Guidance on the use of VTC/e-conference as a preference to travel
Paper	Managed Print Services	Printer choice for users (Global Print)
Paper	Managed Print Services	Proximity PIN printing for pulling prints down at the printer
Paper	Managed Print Services	Print statistics by location/by organisation/team/ individual
Paper	Managed Print Services	Deployments regularly matched and flexed to meet demand
Paper	Managed Print Services	Default driver settings for users eg duplex, 2 up, pitch and fonts for max density of print on a page whilst complying with accessibility standards
Paper	Managed Print Services	Process for managing paper provision across locations and teams to avoid over-stocking
Paper	Addressing other Sustainability Impacts	Training/guidance on working without paper
Paper	Addressing other Sustainability Impacts	Provide and use a 'deny printing' option for documents such as available with Adobe PDFs
Paper	Addressing other Sustainability Impacts	Feedback paper consumption statistics at location or team levels respecting Data protection provisions, to raise awareness using real life

		comparators eg number of trees felled, volume of water used to produce the paper consumed
Paper	Addressing other Sustainability Impacts	Run competitions between teams/locations to reduce paper consumption
Paper	Addressing other Sustainability Impacts	Paper-free days
Paper	Addressing other Sustainability Impacts	Push Digital by default for internal services eg T&S claims, as part of a Digital Transformation programme or as a separate initiative tracking paper reductions achieved
Paper	Addressing other Sustainability Impacts	Push Digital by default for external customer services, as part of a Digital Transformation programme or as a separate initiative tracking paper reductions achieved
Waste	Assets (purchased or deployed)	Buy services rather than assets, enabling suppliers to re-use and share assets across their customers
Waste	Assets (purchased or deployed)	Sweat the asset until lifecycle impacts for new outweigh continuing with old assets
Waste	Community Sustainability	Buy/deploy assets with high percentage of recycled material /components
Waste	Community Sustainability	Buy/ deploy recycled consumables (ensuring sufficient quality of print for accessibility requirements and no deterioration in printer performance) eg toner, cartridges, drums
Waste	Community Sustainability	Buy/deploy assets that are recyclable either partly or wholly
Waste	Behaviour Change	Follow Waste hierarchy when disposing of assets and require suppliers to do likewise

Waste	Behaviour Change	Provide statistics on e-waste tracking by weight and item for each level in the Waste Hierarchy
Sustainable Procurement	Procurement	Conduct a Sustainability Impact Assessment (see Annex for a generic assessment) for service/assets being procured
Sustainable Procurement	Procurement	Adopt relevant government / EU/International/UK Government Buying Standards and accreditations where available and appropriate for type of ICT asset, covering as much of the lifecycle as possible
Sustainable Procurement	Procurement	Build Sustainability KPI's into commercial contracts, for example the production of a quarterly/annual report, meetings set targets for reductions, highlighting ICT input and supply chain transparency
Sustainable Procurement	Procurement	Community use of spare capacities eg WIFI, webinar services, processor/storage space
Sustainable Procurement	Procurement	Providing heat/power to local networks
Sustainable Procurement	Procurement	Require supplier support/help desks to be staffed with fair shift patterns and working conditions
Sustainable Procurement	Procurement	Utilise Social Value Act in ICT procurements
Sustainable Procurement	Procurement	Conduct an assessment of ICT service component locations as regards risk of severe weather events, including Service support team and data centre locations
Sustainable Procurement	Procurement	Conduct an assessment of ICT service component locations as regards risk of material security, conflict minerals, geopolitical risks, including Service support team and data centre locations

Sustainable Procurement	Procurement	Involvement in joint industry/government Sustainable Procurement boards to manage risks and promote good practice
Sustainable Procurement	Procurement	Work with, or request compliance with industry bodies and groups such as Electronic Watch to responsibilities to protect the labour rights and safety of workers in our electronics supply chains.
Sustainable Procurement	Procurement	Utilising innovation opportunities such as blockchain, IOT or circular economy principles (modular) to mitigate sustainability impact