Delivering ‘sustainable’ services: work to factor sustainability into digital project delivery in UK gov

21st May 2026

Green Tech South West

Department
for Environment
Food & Rural Affairs

Who am I

I am Ned, the ‘Sustainable Design Lead’ on the Digital Sustainability team in Defra.

Defra leads on co-ordination and strategy of digital sustainability for wider UK government

This talk is about ongoing work to develop a process to include sustainability alongside other priorities at the level of services (and other projects)!

Running order

The session today will divide into 3 sections:

01

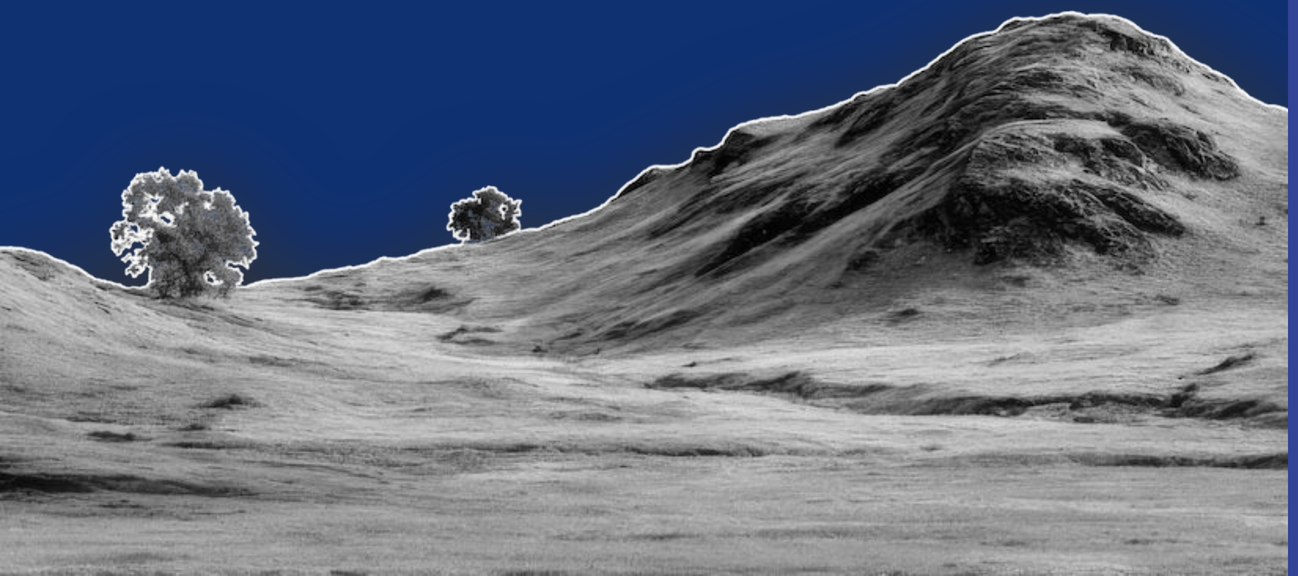
The digital (&) sustainability landscape in UK gov

02

Where this work is currently at!

03

What we have learnt and what's next



The digital (&) sustainability context in UK gov

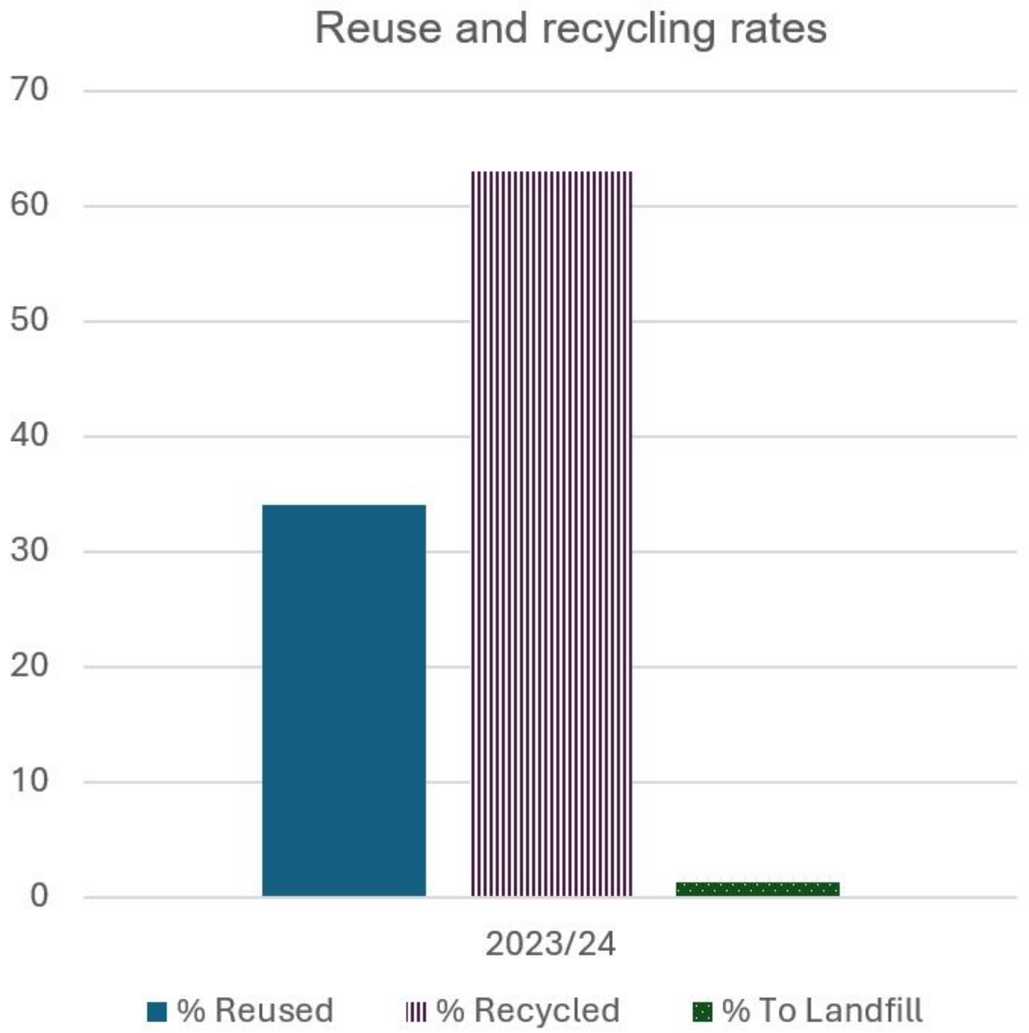
“Technology can be a force for enormous good. It can raise productivity across the economy. It can unlock insight at scale. It can help us solve problems once thought unsolvable.

But we must be honest about the trade-offs. Digital technology brings environmental and social impacts that we can no longer ignore.”

Minister for Nature and Circular Economy Mary Creagh, Government Digital Sustainability Alliance Summit, 2026
https://sustainableict.blog.gov.uk/2026/04/23/digital-sustainability-in-government-an-in-depth-look-at-the-gdsa-summit/

UK government impact…and opportunities

- Government IT is estimated to account for around **360,000 tonnes of CO_2** emissions each year (equivalent to 40,000 UK homes)
- Nearly **1,500 tonnes** of electronic waste are produced annually, including over **250,000 laptops**
- As government spends **£14 billion a year on ICT,** there is a significant opportunity to act as **‘market maker’** and lead change via procurement



In 2026, UK government is bringing a focus onto these challenges:

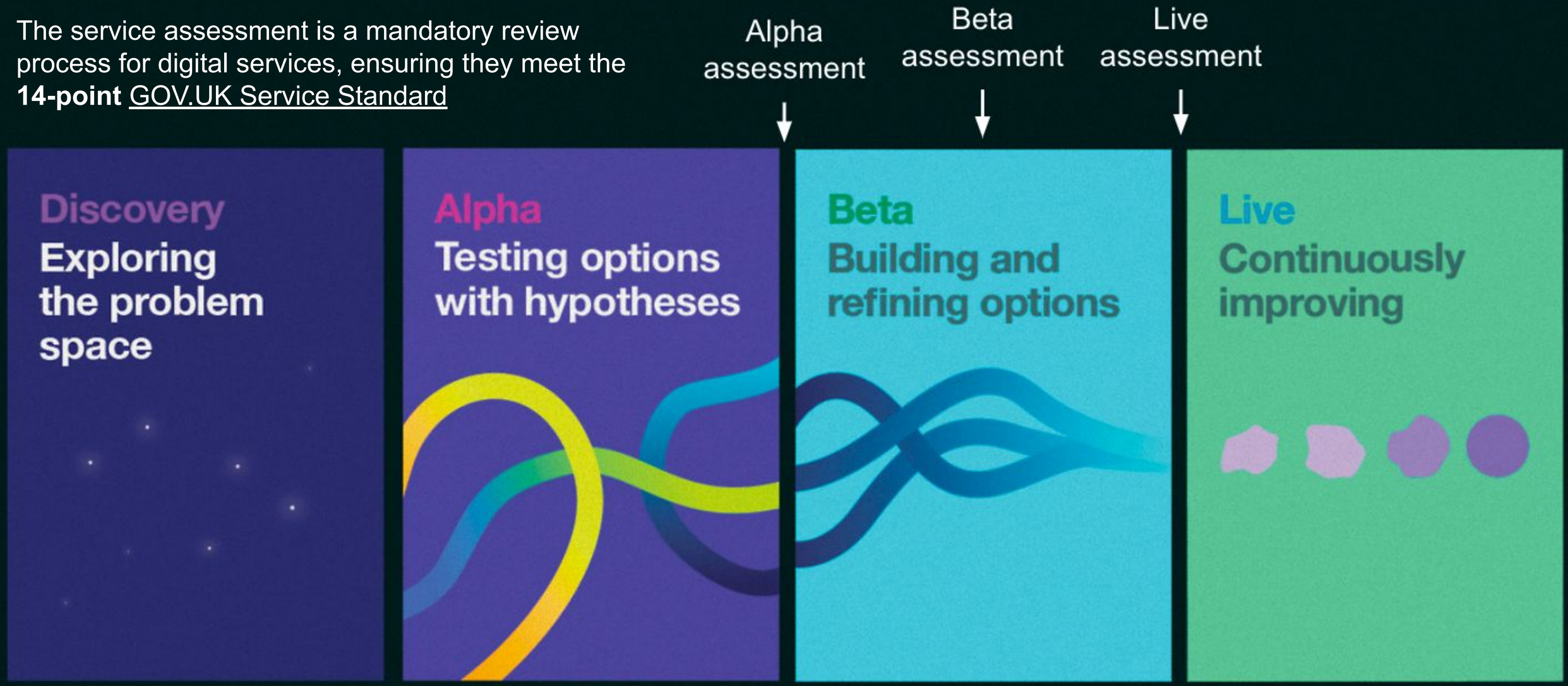
Cross-Government Digital Sustainability Strategy, 2026

Objective	Examples
Continuing our journey to **net zero**	‘GreenOps’ (Cloud workload optimisation) / developing energy efficient software / location of data centres
Maximising **circularity** of resources and **reducing waste**	performance based refresh cycles for hardware / buying remanufactured devices /
Maximising **efficiency of water and heat**	Quantifying water use / use of non-potable water in data centres / closed-loop systems
Delivering **social value** through technology	re-use of heat for community benefit / apprenticeships
Improving **resilience** and **adaptation to climate risk**	location of data centres, edge computing
Handling tech **innovation and disruption**	AI adoption checklist and prompt libraries

How can we help individual services and projects deliver on the strategy, and be ‘sustainable, efficient and circular by design’?

Well…the Service Assurance process!

The service assessment is a mandatory review process for digital services, ensuring they meet the **14-point** GOV.UK Service Standard



Service Standard

Meeting users' needs

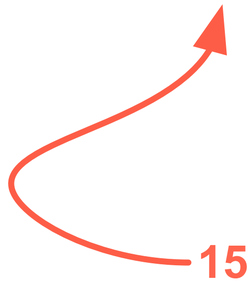
1. Understand users and their needs
2. Solve a whole problem for users
3. Provide a joined up experience across all channels
4. Make the service simple to use
5. Make sure everyone can use the service

Providing a good service

6. Have a multidisciplinary team
7. Use agile ways of working
8. Iterate and improve frequently
9. Create a secure service which protects users' privacy
10. Define what success looks like and publish performance data

Using the right technology

11. Choose the right tools and technology
12. Make new source code open
13. Use and contribute to common standards, components and patterns
14. Operate a reliable service



15. Develop a sustainable service

But: how do we ask digital services to take action on sustainability, and make the process:

Practical
Meaningful
Proportionate
Manageable
Flexible (to context and constraints)

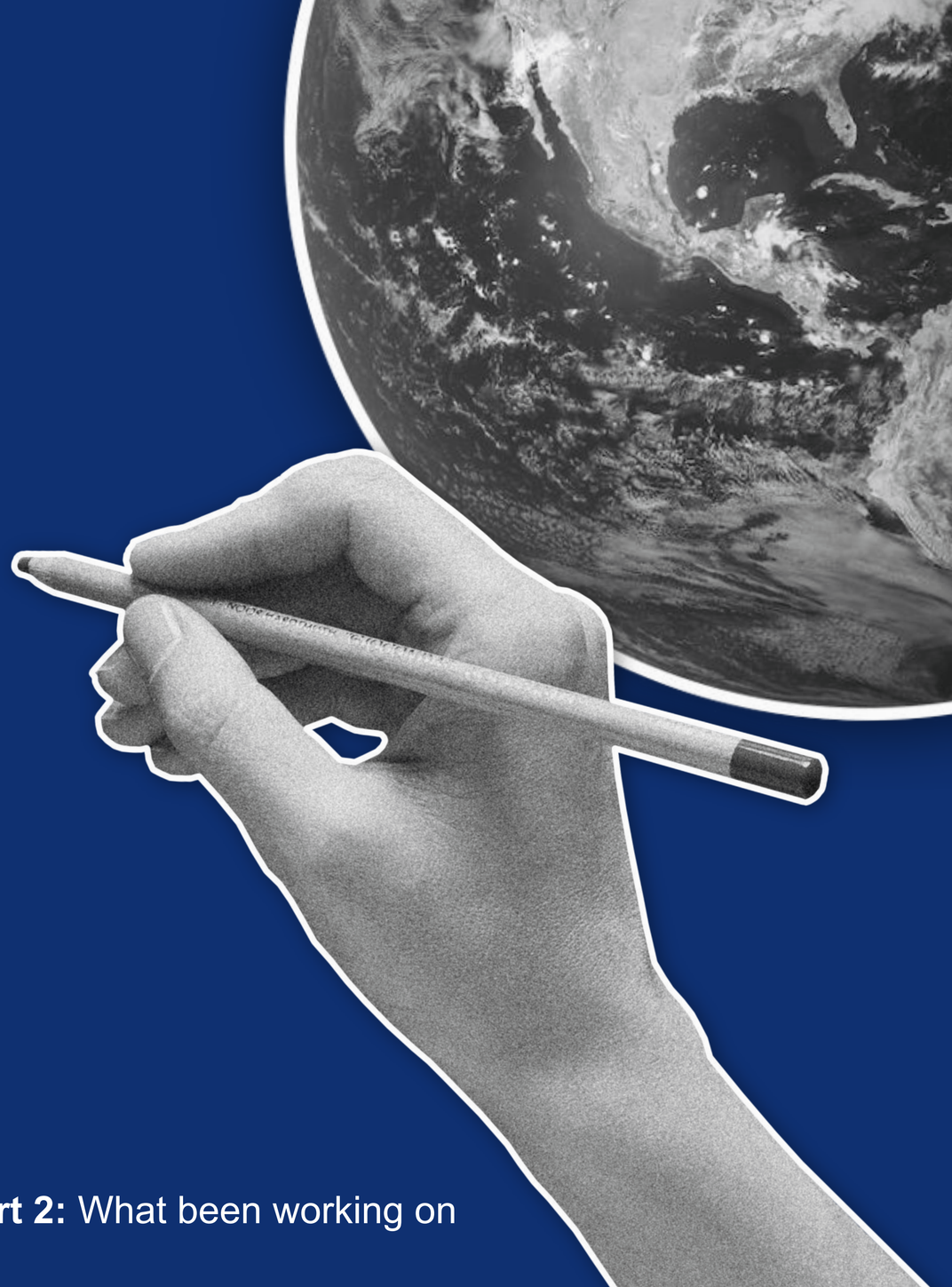
CHALLENGES

And research showed how new to this challenge most digital teams were…

QUOTES

- “I have no comprehension on where to even start with answering these questions”.
- “I kind of don’t know how to answer, I’d need to ask [other projects] to find out what they’ve been doing to reduce server footprint etc.”
- “A lot of delivery managers and those responsible for delivery will be stuck with this.”
- “I don’t know where to find guidance on this…and that leaves me in the lurch…at a loss!”

So, what's the solution? (or where have we got to?



Part 2: What been working on

ASPECT

#1

A UK gov library of ‘actions’ that projects can take on digital sustainability

VALUE

- **Owned by government**, actions **aligned** to the x-gov **strategy** and other standards and goals
- Clear set of **plain language** themes & actions, understandable by **non-technical audience**, with detailed points for **particular disciplines**
- Highlighting where there are likely **co-benefits** between sustainability and other priorities
- Advice relevant for projects of different types – **external and internally facing services** and **technology projects**

Structuring content

THEME

Software

Architecture

Hardware

Artificial Intelligence

Hosting

Data

Journey & Experience

Procurement

Project Management

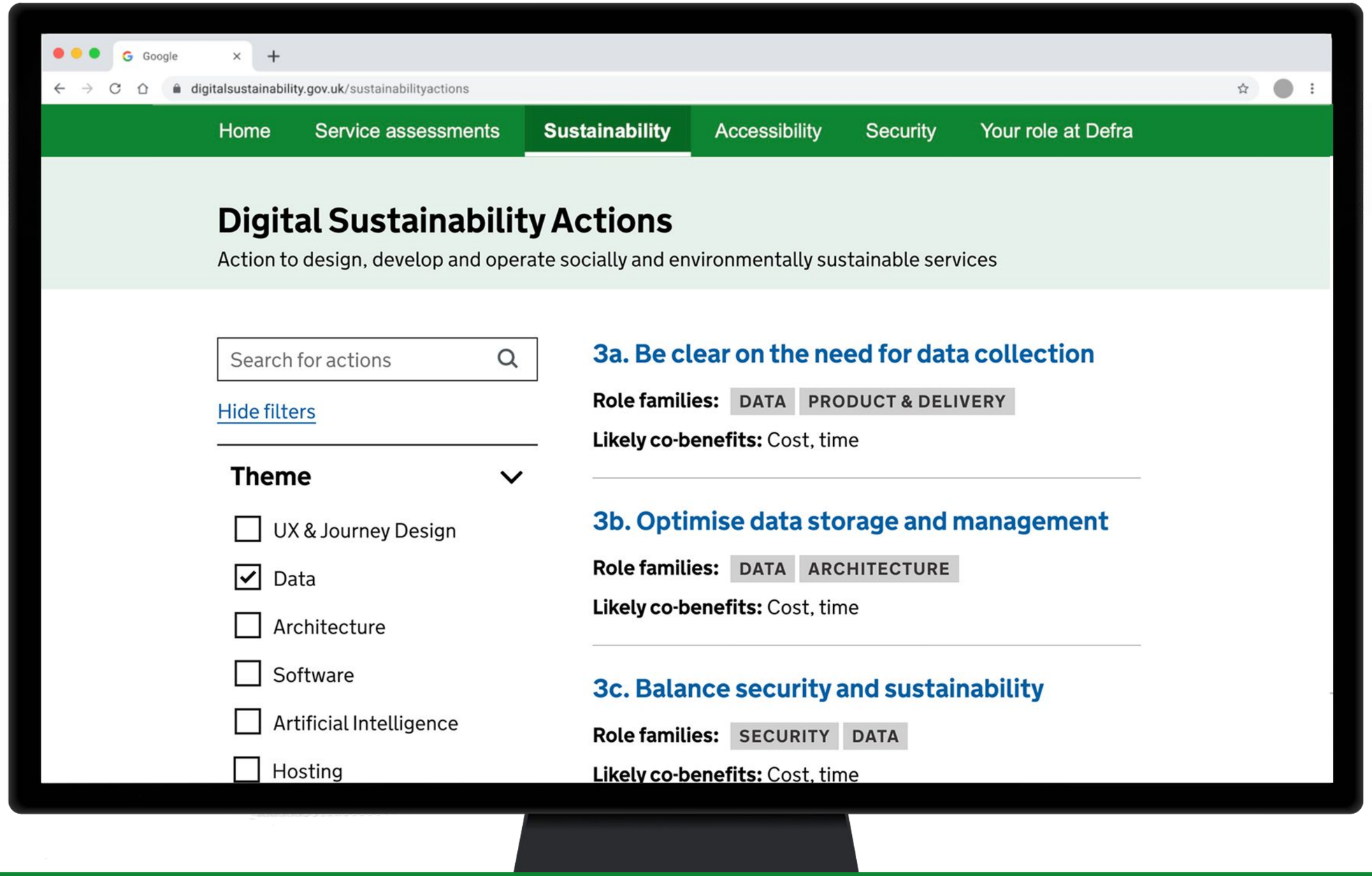
ACTIONS

3a. Be clear on the need for data collection

3b. Optimise data storage and management

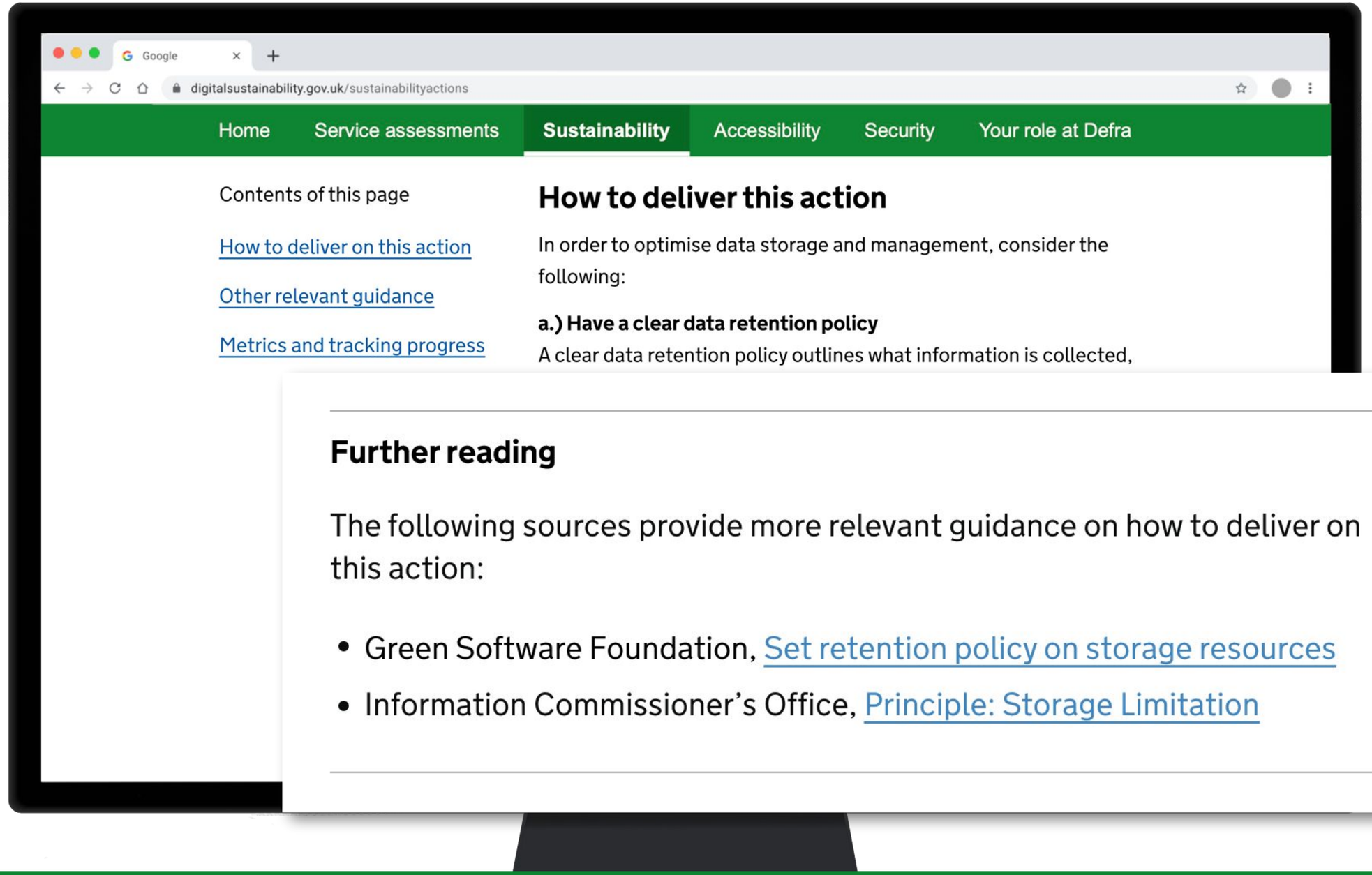
3c. Balance security and sustainability

3d. Optimise data for transit



We are working on getting the library of actions onto a **defra.gov.uk page** that anyone can access…

…and making actions **searchable and filterable**



Detailed guidance then sits below each of the higher-level actions

ASPECT

#2

An end-to-end sustainability process to guide and support projects

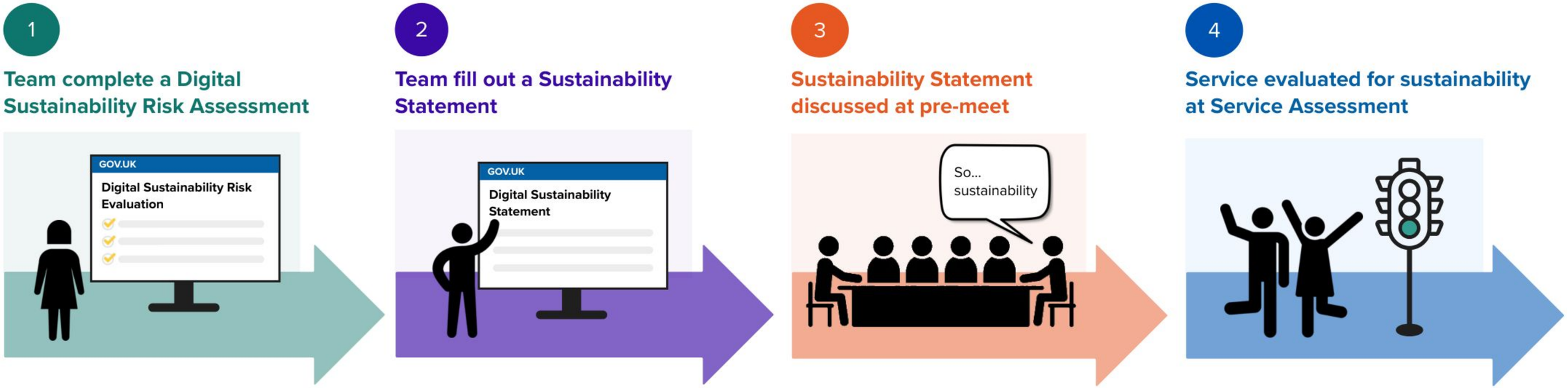
POINTS

- A **joined-up process**, going from helping projects understand sustainability risks through to be ready to be assessed for sustainability at service assessments

- Guide projects to understanding what **sustainability actions** are **relevant** for their context and situation

- Aligning with the **established Service Assessment process**, as well as other assurance steps

An end-to-end process to guide projects



We have been working on a **joined up, consistent**, e-2-e process, with the goal of helping service teams **understand** what sustainability **actions are relevant** for them and how to take them, before then being assessed at Service Assessments.

The Sustainability Risk Assessment

- This form asks a team a series of questions about the scope/size of their service or project, focusing on what technology will (likely) feature and how this will be utilised

- In response, the team receive a sustainability risk rating (high, medium, or low) and an indication of what actions they can take to mitigate this

16. Is this software bespoke or off-the-shelf? *

- bespoke - custom software developed for the requirements of the project
  - in-house - developed by internal staff, with resource augmentation if required
  - by a supplier - developed by an external organisation
- off-the-shelf - pre-packaged software available "out of the box"

- ( ) Bespoke - developed in-house
- ( ) Bespoke - developed by a supplier
- (•) Bespoke - developed both in-house and by a supplier
- ( ) Off-the-shelf
- ( ) Off-the-shelf - customised

17. Will your service involve **cloud & hosting** services? *

This includes implementing, renewing or utilising compute and data storage provisions as part of your service, such as:

- cloud hosting services - hosting software virtually on a third-party network, such as Azure, AWS or Google Cloud
- colocated hosting services - hosting software on servers in a rented space in a data centre
- on-premise hosting services - hosting software on computers, servers or data centres owned by your organisation

This does not include using hosting services to help deliver your project, such as OneDrive or SharePoint.

- (•) Yes
- ( ) No

Digital Sustainability Statement for _____ Service

This sustainability statement applies to the _____ Service being developed by the Department for the Environment, Food and Rural Affairs.

Sustainability risk assessment

The _____ Service is currently at the Alpha stage, and completed a DDTS Digital Sustainability Risk Assessment on 25 March 2026. A **medium** level of risk for sustainability was assigned to the service based on its high level scope as outlined in the assessment.

Digital Sustainability Risk Assessment	
Sustainability Risk level:	Medium

The Assessment pointed to 2 key risks faced by this project: These were:

Risk 1	Data storage – 'When data is being stored, it generates emissions continuously, so having multiple copies of data and storing them for extended periods of time can lead to more emissions than a central database'.
Risk 2	Cloud hosting – 'Cloud hosting can offer some clear sustainability benefits if implemented in line with Defra's Greener Service Principles – but without ensuring that these are implemented and monitored there is a risk of unnecessary emissions and waste generation'.

Sustainability actions

The _____ has taken the following approaches under the 6 objectives of the Defra Digital Sustainability Strategy 2025-2030 to address the risks identified in the Sustainability Risk Assessment.

Objective 1: Reduce carbon emissions towards net zero targets

Sustainability and efficiency risks and actions	
Main risks and opportunities	Greenhouse gas emissions resulting from the energy consumption coming from data storage and Cloud hosting

The Sustainability Statement

- Room to record actions taken, as well as planned, against the strategic sustainability objectives, whether decarbonisation, circularity, delivering on social value etc
- Space to record any sustainability metrics, where appropriate*
- Space to record any trade-offs made between sustainability and other priorities, such as performance, security
- Space to record particular constraints that the project may

ASPECT

#3

An evolving and flexible approach to ‘measuring sustainability’ - quantifying progress

POINTS

- We have **introduced sustainability at Defra Service Assessments from 1st April**

- Due to **lack of established tooling**, **data availability**, and **case studies** of measuring the energy and carbon usage of whole services, we are not currently expecting this

- We are **encouraging use of proxies, where appropriate** (such volumes of data stored, or cost savings through making Cloud activities as efficient as possible) when those are likely to be meaningful

What’s next, (and what have we learnt)

What’s next?

- **Piloting our sustainability process** with services in a **number of other gov departments**
- Getting our **materials and guidance** onto **gov.uk page**
- Work with Government Digital Service on creating comprehensive sustainability guidance in the **‘Service Manual’**
- Developing our guidance on **approaching measurement**, experimenting with different tools on some **real services**, and aiming to develop **repeatable approaches captured in case studies**

What have I learnt?

As (largely) a team of one, full time on this work:

- Iterate, iterate, iterate! One step at a time, don’t expect to get it right from the start, and clearly label prototypes as such. Be patient
- Invest in growing and maintaining relationships with supporters who pop up – they may be real enablers down the road. And people who really care about sustainability can be in all sorts of roles and day jobs!
- Create safe and fun ‘spaces’ (e.g. workshops) for people to have the time to focus on current challenges, and possibilities of doing things differently. Help them get away from the day job and unleash some creativity, collaboratively
- Socialise and share these events, cultivate the FOMO (fear of missing out). This can influence senior as well as more junior people in a big organisation!


PROBLEM
-TOO MUCH MONEY, PROCESS & PAPER
THE SERVICE
PASSPORT


1
3
5
6
9

Government Digital Sustainability Alliance

We have been lucky that the brilliant GDSA Advisory Group has matured and grown so much in the last 3 years.

Begun in 2023 with a few large suppliers, it now has more than 100 members from across sectors

https://www.gov.uk/government/groups/government-digital-sustainability-alliance-gdsa

Iterating guidance

10 principles for the design and delivery of greener services (v0.3)

1 Design for green policy

Government Digital & Data

Sustainable by design

Principles About

Principles > 8. Design for greener architecture, data and security

8. Design for greener architecture, data and security

Greener approaches to architecture, data and security help maximise efficiency and reduce waste.

> The actions under this principle can generally be applied to on-premise systems as well as data centres in the 'cloud'.

Likely lead roles

Technical architect, solution architect, network architect, data architect, security architect, platform team

	Environmental Significance	Synergies with
6. Design for lightweight pages, notifications and	The size of pages, files, and documents (in bytes) is one major factor that influences the amount of data transferred to user devices and therefore energy used (including on user device) and associated carbon emissions from a service	**Inclusivity**: A li servivce is more users with slow connections **Accessibility:** experiences des reliance on mult are likely to be **General Usabil** loading speeds users engaged completion and rates **(Financial) Cos** stored and trans reduces how mu required to be pruchased/main organisation pro service.

EXTRA SLIDES

‘Orders’ of environmental impact…

For assessing sustainability, we are focused on ‘first order’ impacts of digital services:

‘Order’	Description	In Sustainability Statement:
First	The ‘direct’ impact of the new or revised service, in terms of carbon, water, material consumption, waste etc	Record what actions have been taken or planned, as well as constraints and trade-offs
Second	The impact of the new service relative to what is being replaced – is the new service less polluting and resource intensive than the old?	There is space for summary of any calculations of ‘net benefit’ to be recorded
Higher	The impacts coming from wider economic and societal effects of the service (e.g. behaviour changes)	Not required in statement – but tracked in terms of policy outcomes

Why do we need the specific sustainability lens?

1

Gives us **another reason** to follow '**good practice**' where it is emerging / established for other reasons (e.g. performance, cost

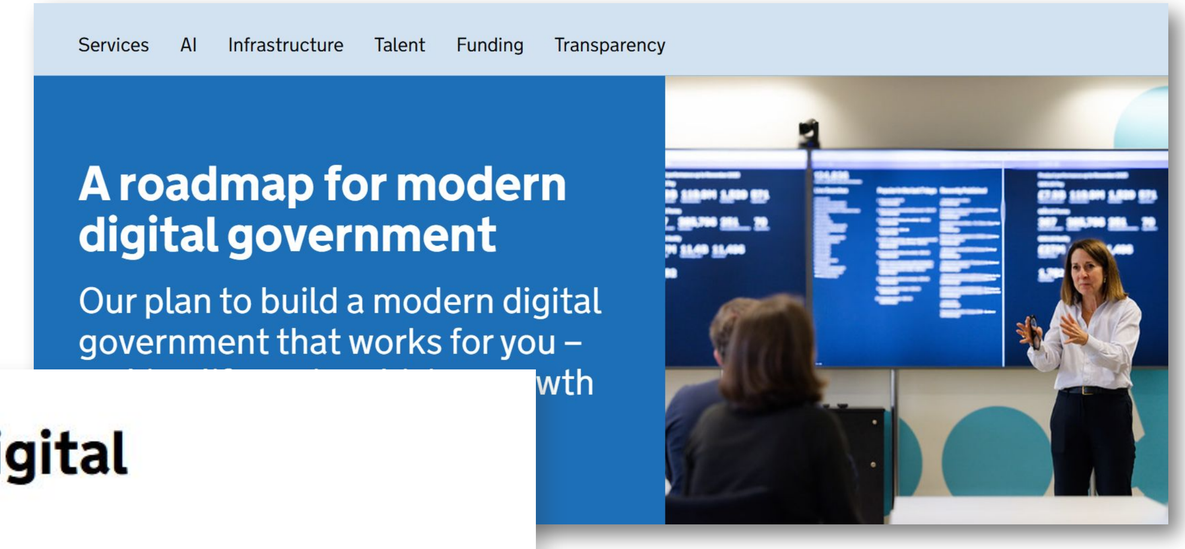
2

Highlights **'sustainability-specific' things** we might not be doing already e.g. using refurbished hardware devices, making use of low-carbon electricity when available

3

Helps us **shift** from an **abundance to a 'scarcity' mindset** with digital, which is a vital change if we are to deliver on sustainability targets.

Roadmap for Modern Digital Government



March 2026: publish cross-government digital sustainability strategy

The Department for Environment, Food and Rural Affairs (DEFRA) will publish a new strategy for ensuring government's digital services are sustainable, efficient and circular by design. This will allow us to minimise the environmental impacts of digital government and support the UK's growing digital sustainability sector. GDS will strengthen existing sustainability guidance in the Service Standard and Service Manual, building on DEFRA's work.

new cross-gov strategy

GDS will strengthen official guidance

Creating common systems and platforms for all of government to use - A roadmap for modern digital government, Jan 2026