Greener NHS Digital Workstream

Bringing Climate Risk into Digital Risk Management

Presented by:
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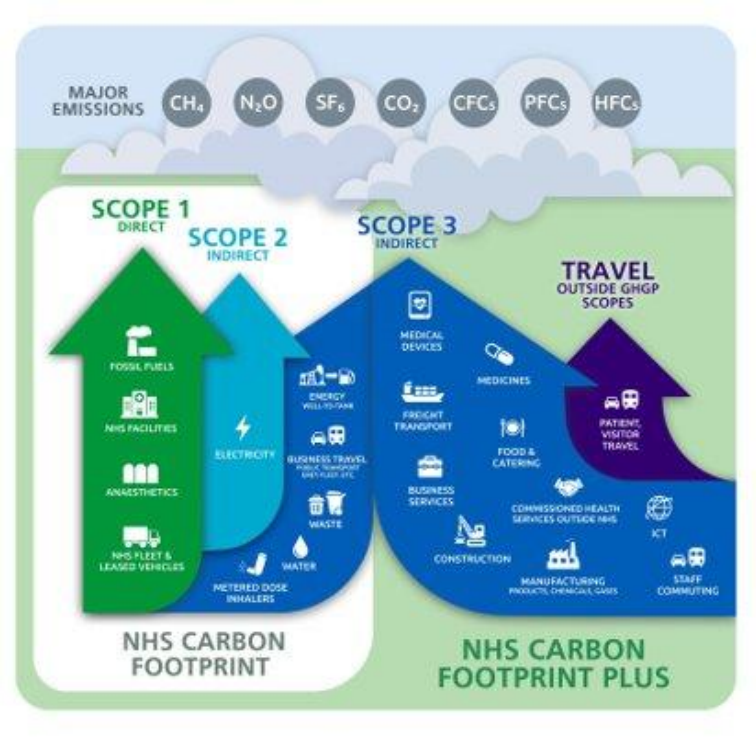
The Greener NHS Climate Response

The NHS is responsible for around 5% of UK emissions and as the largest employer in the UK (1.4 million staff), we can make a real difference. In 2020 the NHS committed to:

- **Net zero for emission we control directly by 2040, ambition to reach an 80% reduction by 2028 to 2032**
- **Net zero for emissions we can influence by 2045, ambition to reach an 80% reduction by 2036 to 2039**



Greener NHS Digital

Greener Digital is the Greener NHS Digital Workstream. We aim to:

- ✓ **Support the system to create low carbon and climate change resilient digital health systems**
- ✓ **Provide advice & guidance across whole NHS + an assurance function within NHSE**

The Size of the CO2 Prize

The Challenge:

Recent estimates suggest that **technology accounts** for between **7-10%** of an **organisation's Carbon Footprint** (see breakdown)

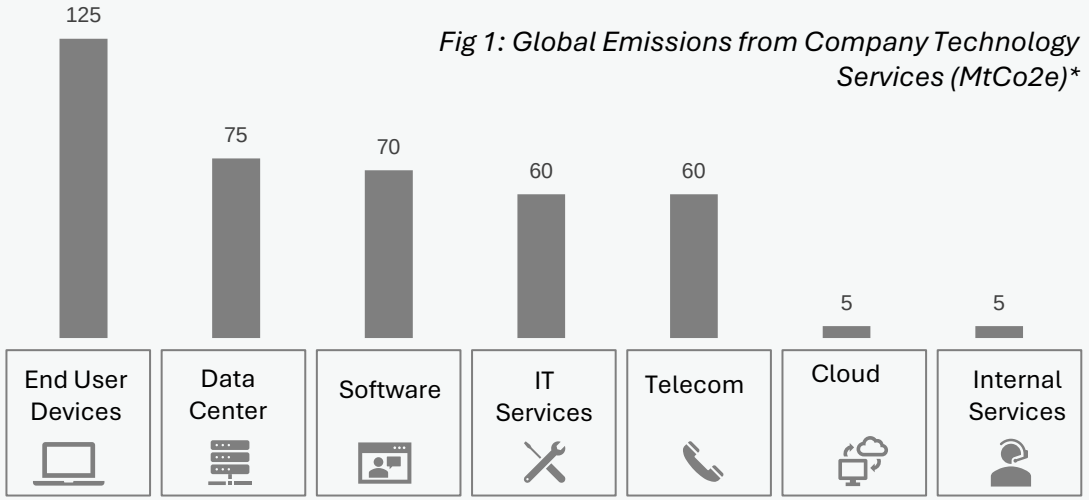


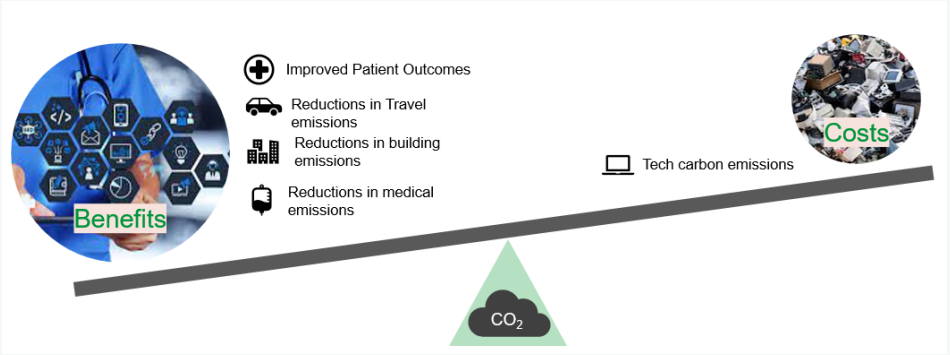
*Fig 1: Global Emissions from Company Technology Services (MtCo2e)**

Greener NHS is working to develop a more detailed carbon footprint for all Trusts, ICBs and national bodies that make up the NHS.

For More Information: Please see the Net Zero Digital NHS Futures Page

Our Solutions

1. Assessment tool for all Tech Programmes to ensure new Digital Health Pathways improve patient outcomes and have net positive carbon impact (e.g. digital solution is carbon efficient and offset by reduced travel)



2. To reduce the NHS Technology Carbon Footprint by ensuring 'Green Digital Basics' are being met, many of which release **co-benefits** and **cost savings**.

Circular Devices: Apply circular principles to the purchasing of end user devices to reduce their number and associated carbon footprint

Efficient Data Storage: To reduce the volume of unnecessary data and ensure storage is as energy efficient as possible

Green Software: To ensure software is designed and built to Green Tech code of practice standards

**Mckinsey, (2022) The Green IT Revolution a blueprint for CIOS to combat climate change https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-green-it-revolution-a-blueprint-for-cios-to-combat-climate-change?cid=eml-web*

Green AI

Department
for Environment
Food & Rural Affairs

Digital Sustainability and AI

Internal Question Set

February 2025

Version: 1.0

2. Internal question set .....

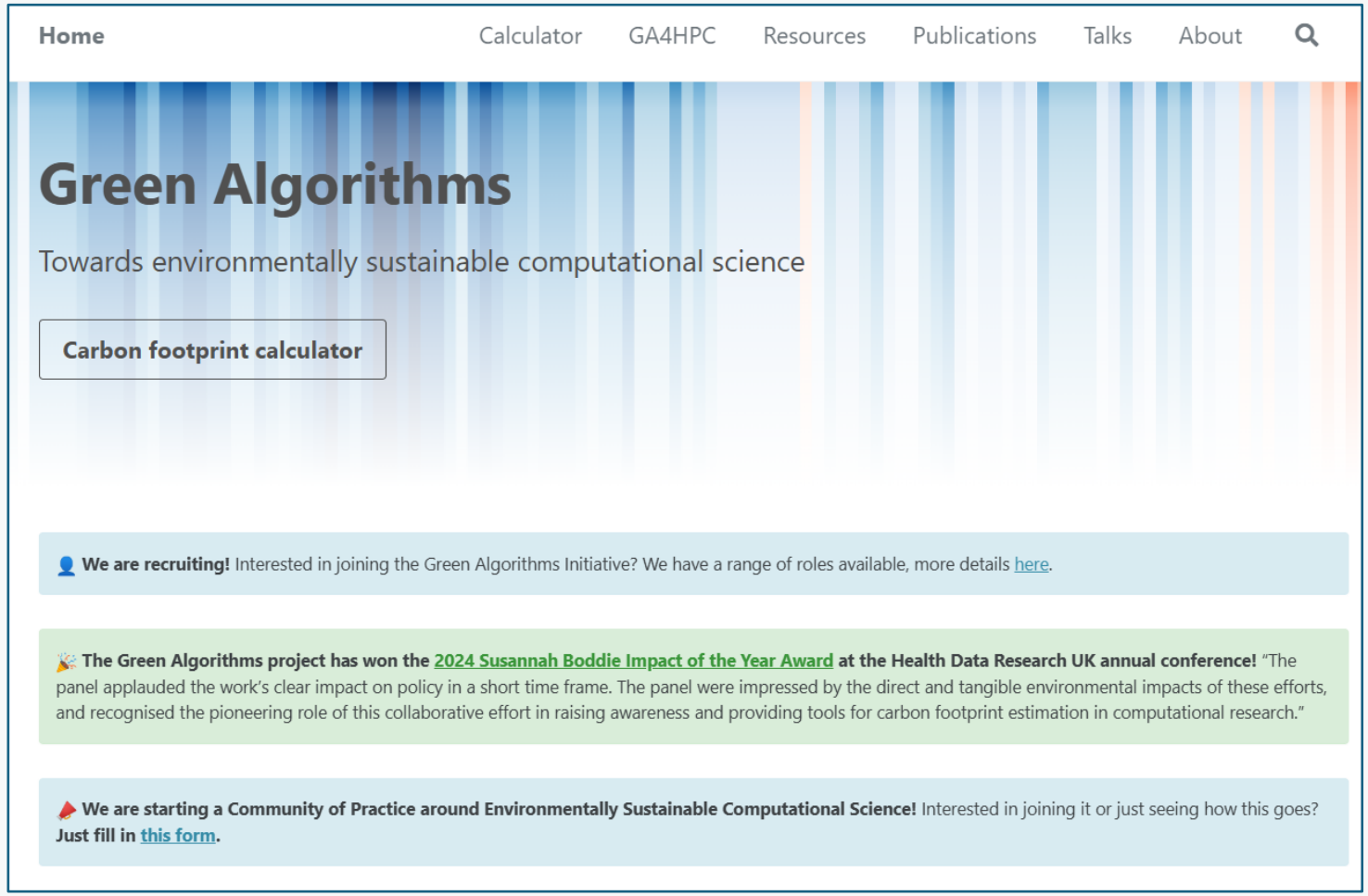
Do you need to use AI? .....

Choosing the right AI pipeline .....

Choosing the right infrastructure .....

Ensuring social value .....

Ownership and monitoring .....



Climate crisis

Hottest January on record mystifies climate scientists

EU monitor says global temperatures were 1.75C above preindustrial levels, extending run of unprecedented highs

Agencies

Thu 6 Feb 2025 09.41 GMT

Share

Unseasonal storm clouds brought by La Niña loom over an outback campsite in Rainbow Valley, Australia. Photograph: Genevieve Vallee/Alamy

A run of record-breaking global temperatures has continued, even with a La Niña weather pattern cooling the tropical Pacific.

The Copernicus Climate Change Service said last month was the warmest January on record, with surface - air temperatures 1.75C above preindustrial levels.

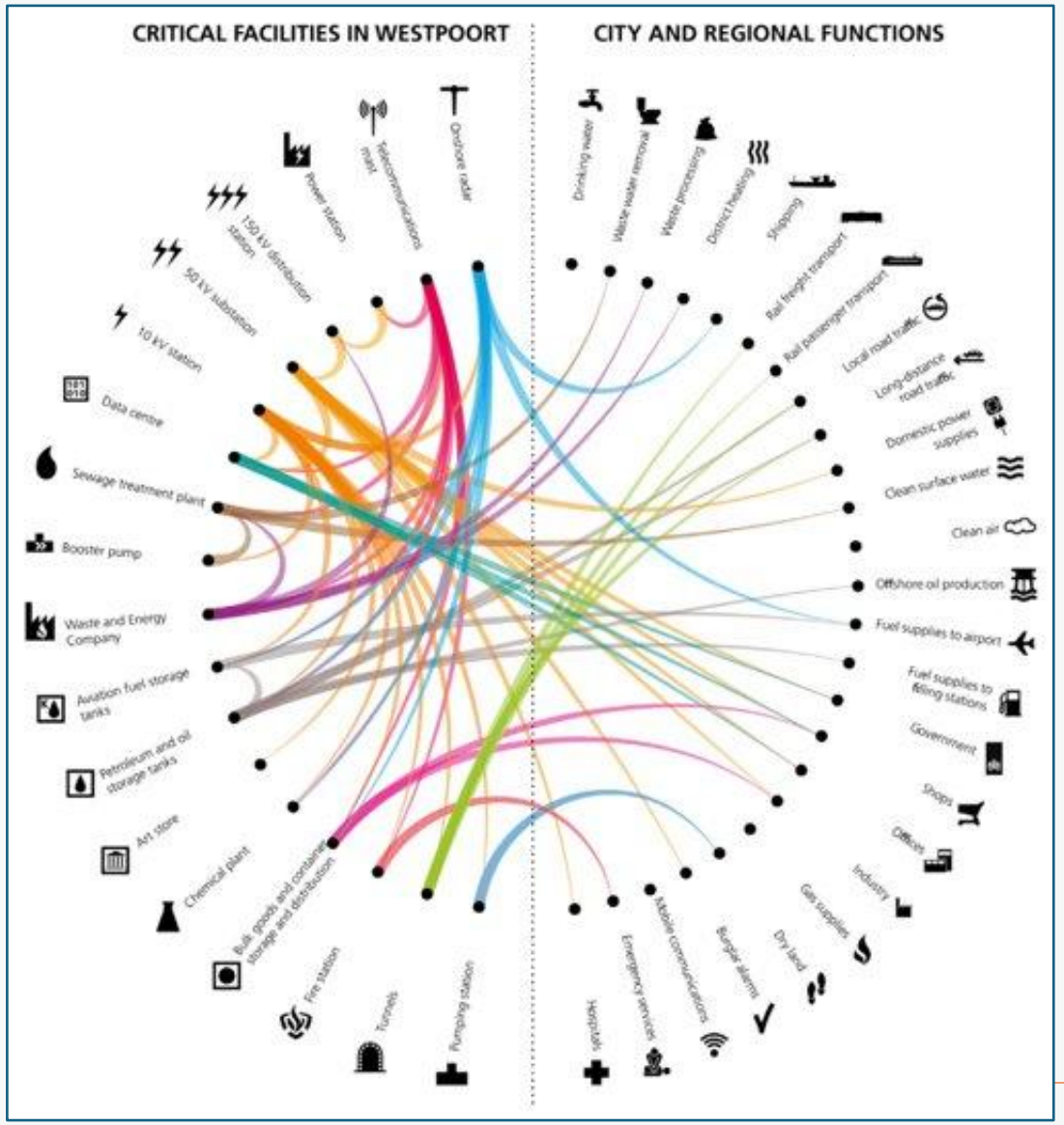
The EU-funded Earth observation programme highlighted wetter-than-average conditions in eastern Australia and drier-than-average conditions in other parts of the country.

But… we need to be rely on our digital services as a climate resilience lever also, so…

How can we ensure our digital service is less likely to fail + quicker to recover when climate risks (eg heatwave) occur?

Audience Question – who is thinking about this and how are you approaching it??

Digital as part of Critical National Infrastructure



UK Parliament

Committees

UK Parliament > Business > Committees > National Security Strategy (Joint Committee) > News Article

Call for Government to "get a grip" on climate change impacts

27 October 2022

A Committee of senior MPs and peers has implored the Government to get a proper grip on the major national security risks posed by the effects of climate change on critical national infrastructure (CNI), such as power, water, transport and communications.

Climate Risk to Digital & Health

H1. Risks to health and wellbeing from high temperatures

H2. Opportunities for health and wellbeing from higher temperatures

H3. Risks to people, communities, and buildings from flooding

H12. Risks to health and social care delivery from extreme weather

H13. Risks to prison and education services from extreme weather

H7. Risks to health and wellbeing from changes to indoor and outdoor air quality

H8. Risks to health from vector borne diseases

ID9. Risk to UK public health from climate change overseas

H10. Risks to health from poor water quality or supply interruptions

I13. Risks to digital from high and low temperatures, high winds, lightning (I13)

I1. Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures (I1)

I2. Risks to infrastructure services from river, surface water and groundwater flooding (I2)

I3. Risks to infrastructure services from coastal flooding and erosion (I3)

I7. Risks to subterranean and surface infrastructure from subsidence (I7)

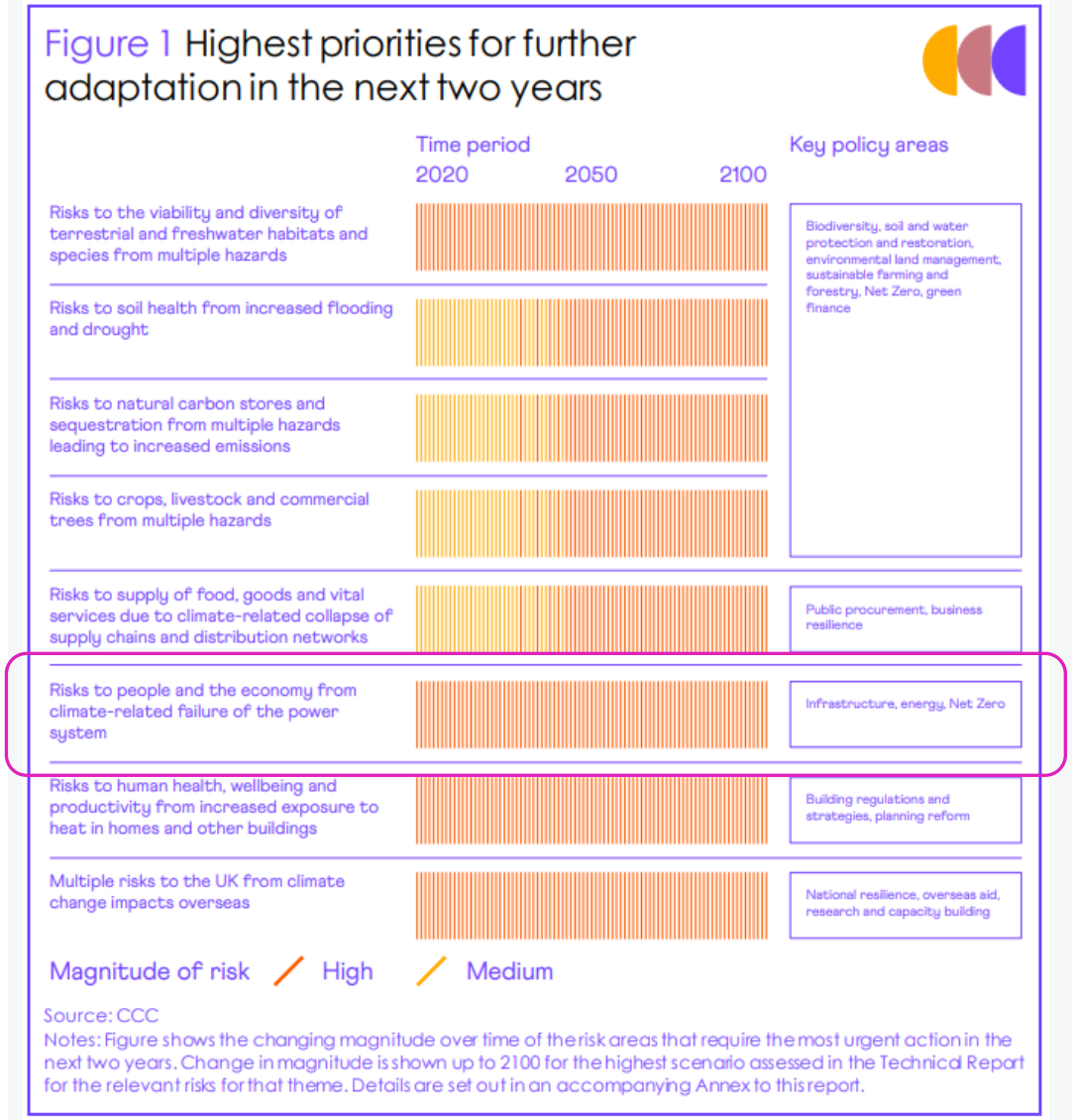
Energy Outages – Key Preparation

Government tests energy blackout emergency plans as supply fears grow

Exclusive: Whitehall officials have 'war gamed' Programme Yarrow, a blueprint for coping with outages for up to a week

Concerns over the impact of an energy blackout have grown since the start of Russia's war on Ukraine. Photograph: Jon Bower/Alamy

The government has "war gamed" emergency plans to cope with energy blackouts lasting up to seven days in the event of a national power outage amid growing fears over security of supply this winter.



A Wake-Up Call

London NHS trust cancels operations as IT system fails in heatwave

Guy's and St Thomas' trust having to postpone and divert appointments, with doctors unable to see patients' notes

Both of the trust's data centres, one at Guy's hospital and the other at St Thomas', stopped working on Tuesday afternoon. Photograph: Maureen McLean/Rex/Shutterstock

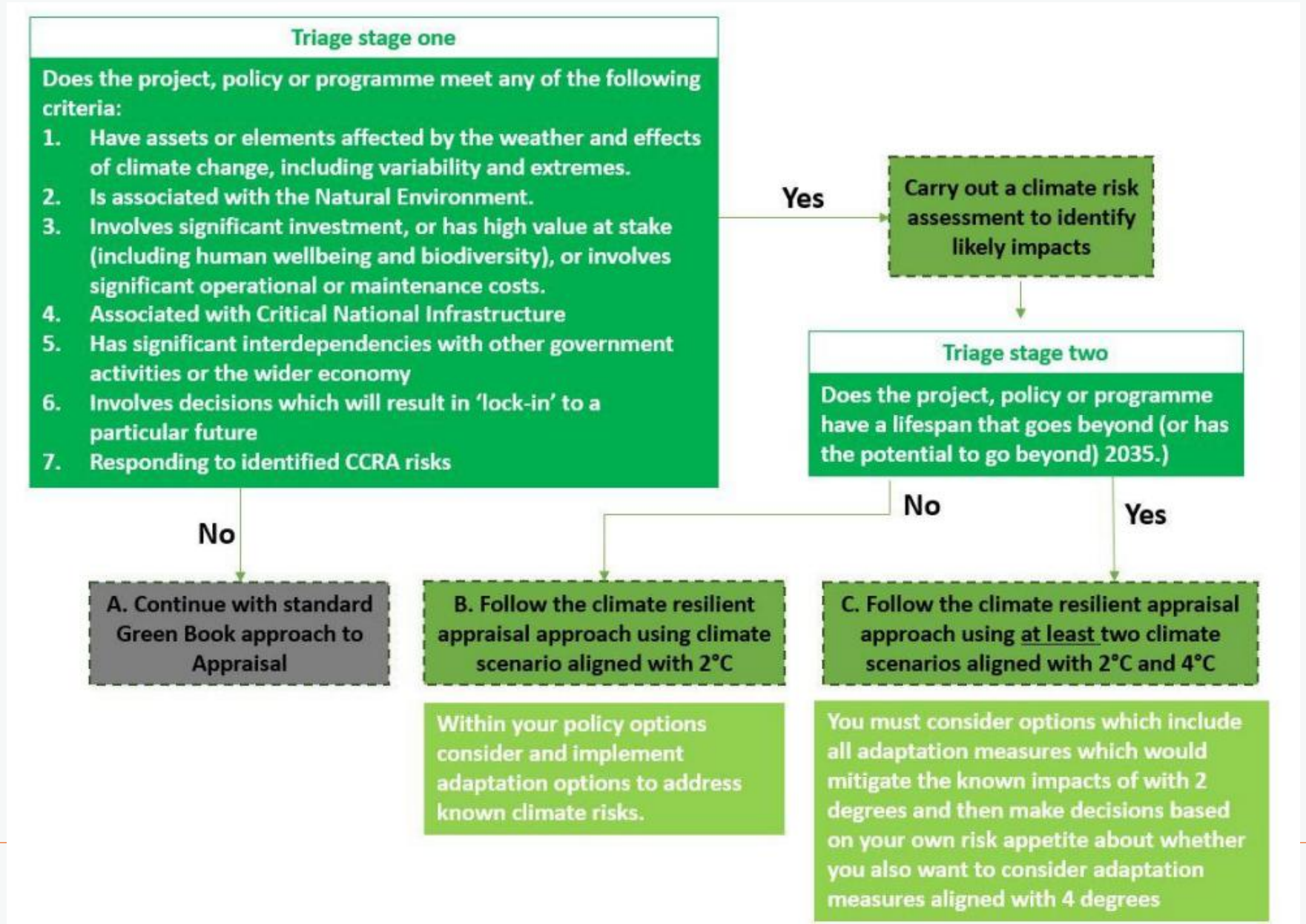
One of the NHS's biggest hospital trusts is facing major problems after its IT system failed because of the extreme temperatures earlier this week.

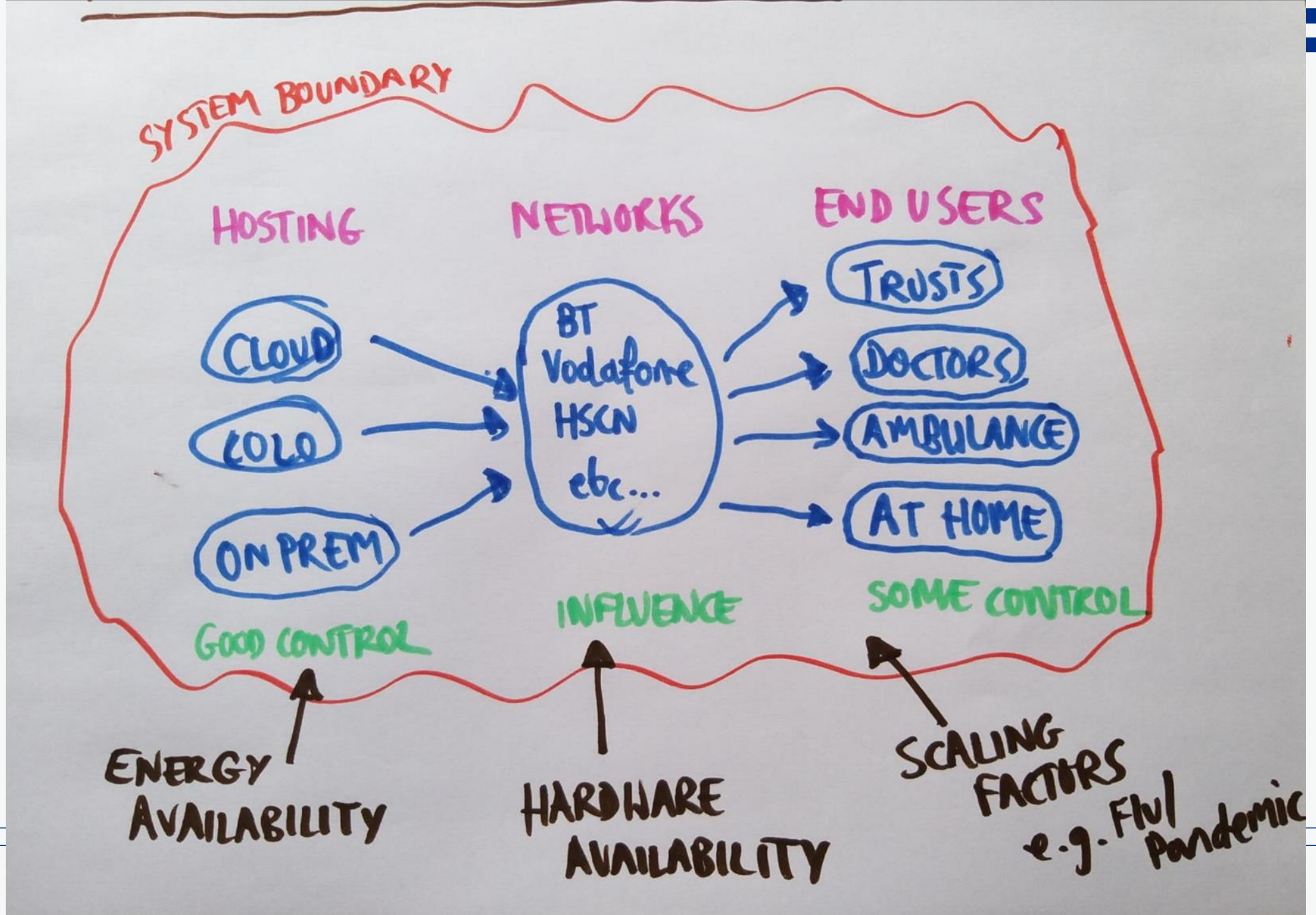
Guy's and St Thomas' trust (GSTT) in London has had to cancel operations, postpone appointments and divert seriously ill patients to other hospitals in the capital as a result of its IT meltdown.

Lessons learnt report recommendations:

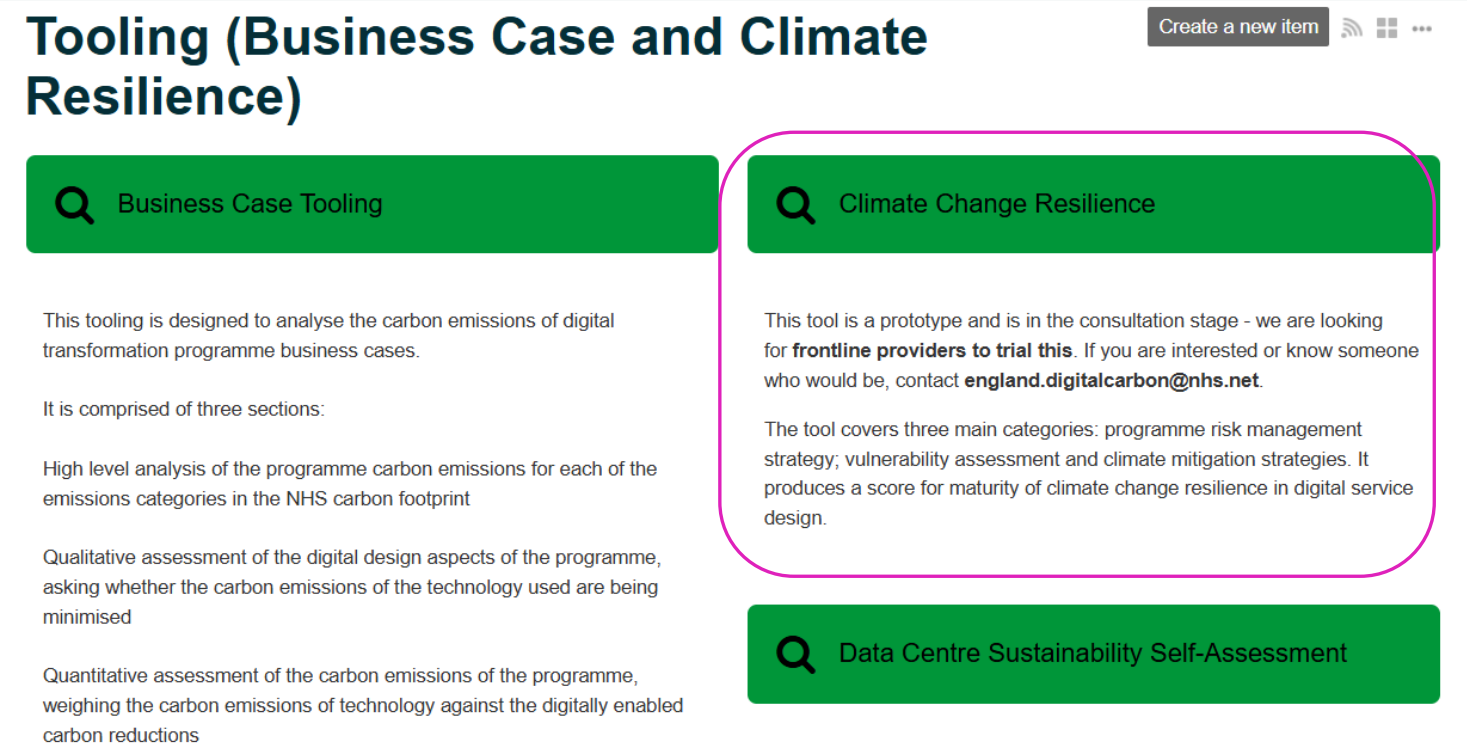
- Strategic plan for future events
- Set formal accountabilitites and responsibilities
- Alert NHS England to wider sector risk
- Carry out emergency drills for future heatwaves
- Support staff suffering from stress from the event
- Clinical guidance for non-digital decision making
- Have effective paper based fallback processes
- Ensure data recovery is sound
- Full register of assets/software to help recovery
- No single points of failure in staff capabilities
- Plan for communications in major incidents
- Review cooling, air handling and flood prevention

Green Book – Accounting for Effects of Climate Change




SYSTEM BOUNDARY
HOSTING
NETWORKS
END USERS
CLOUD
COLO
ON PREM
BT
Vodafone
HSCN
etc...
TRUSTS
DOCTORS
AMBULANCE
AT HOME
GOOD CONTROL
INFLUENCE
SOME CONTROL
ENERGY AVAILABILITY
HARDWARE AVAILABILITY
SCALING FACTORS
e.g. Flu/ Pandemic

Our Journey So Far...



Audience Question – what's the best frame for climate risk to digital? (for me maybe core business – patient safety?)

2024 Work; Key Themes and Recommendations:

1. **Awareness and Expertise**: Improve awareness amongst all levels of NHS stakeholders on climate impacts to digital health; engage stakeholder expertise through workshops to identify impact chains and prioritise areas for deeper analysis
2. **Data Quality and Availability**: Obtain more granular hazard exposure data at the site/trust level to improve relevance; gather and analyse data on sensitivity and impacts of past climate events on digital systems; use improved data to quantitatively model health and financial risks
3. **Comprehensive Risk Modelling**: Develop models that incorporate cascading risks, multi-channel impacts (e.g. power outages), and long-term effects; use risk modelling to prioritise resilience efforts and adaptation measures
4. **Resilience and Adaptation**: Advance system-wide resilience for NHS digital health; identify and implement site/trust-specific adaptation measures in a collaborative way; ensure equitable resilience without unintended consequences or uneven impacts

Our New Systems Approach

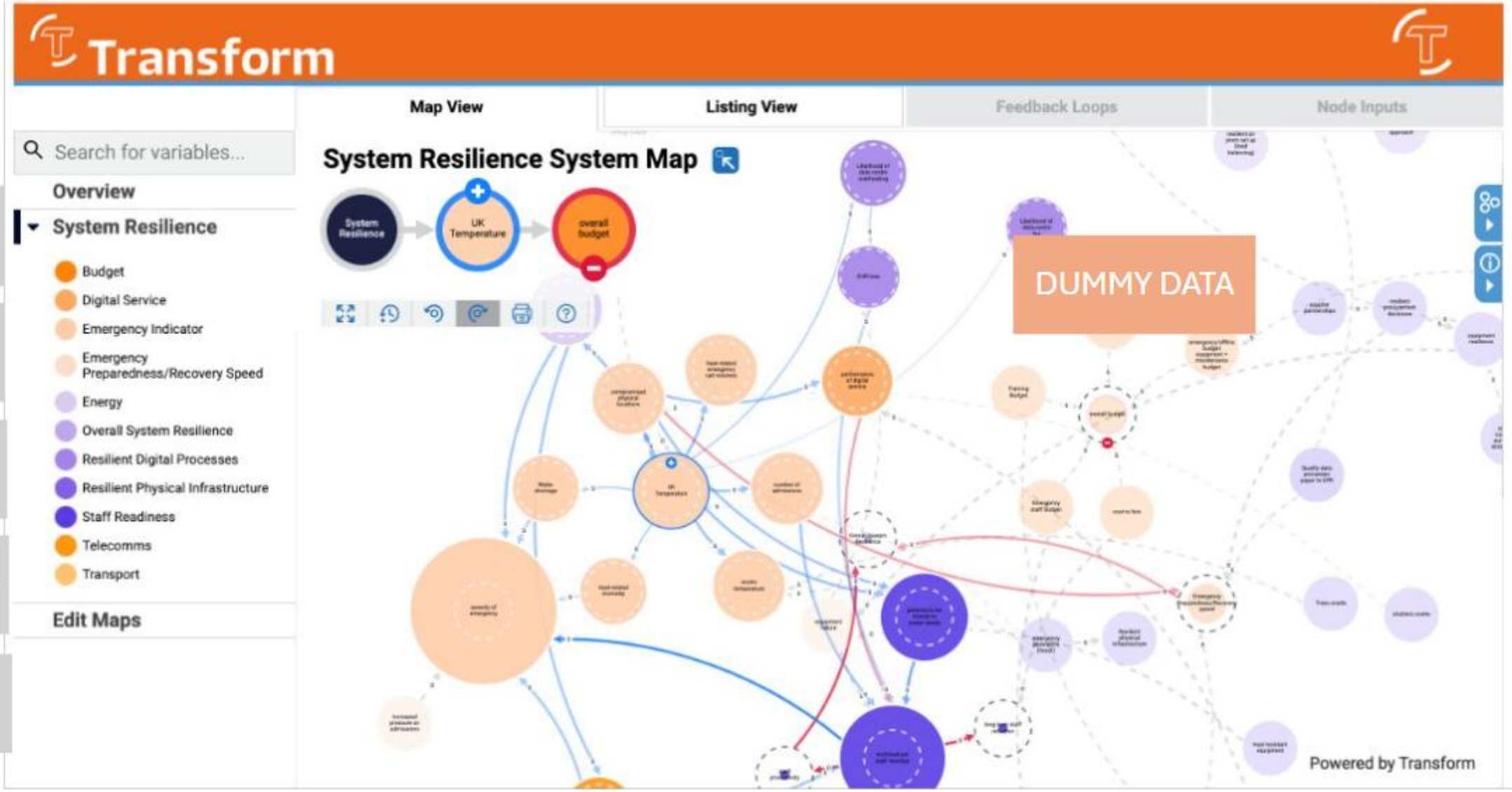
Data can be interrogated – increase temperature

Scenario/ Policy planning – eg decreased budget

Plot consequences – scale of expected outcomes

See unintended consequences – other parts affected

Collaborate to agree mitigative action



The Procurement Lever is so key

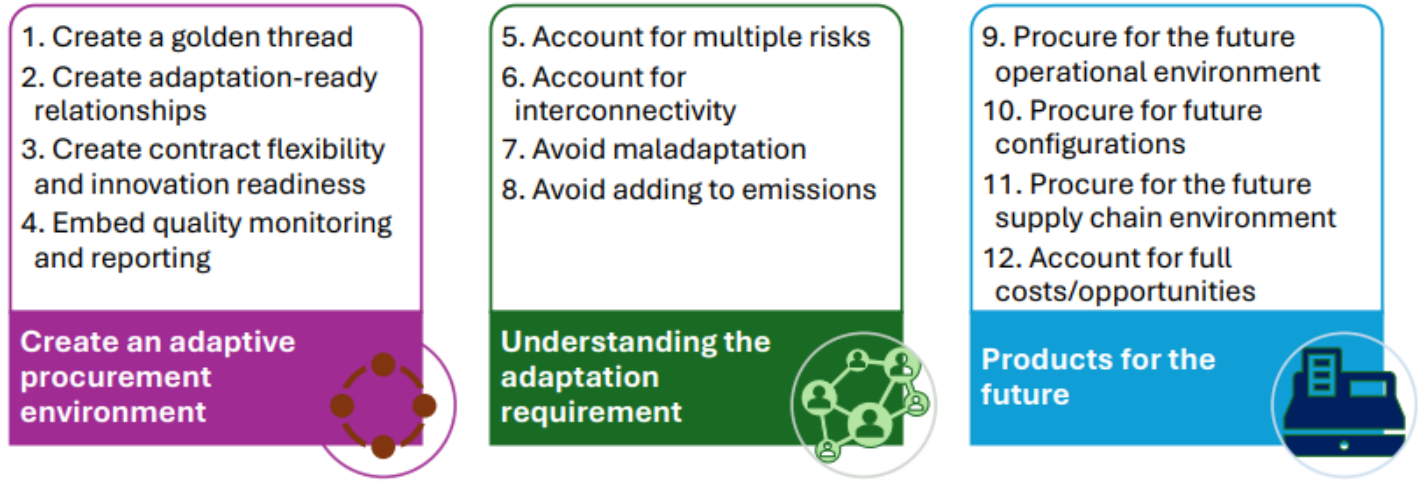


Figure 3: Overview of the Procurement for Adaptation Principles

Audience Question – are your teams considering climate change adaptation in procurement?

Come and Get Involved!!!

Please email ben.tongue@nhs.net to:

1. Express an interest in helping with Phase 2 of this work
2. Be kept in the loop with it – we are offering presentations at end of Phase 1