



Transforming NHS estates: The vital role of smart hospitals, decarbonisation and climate adaptation



Today's session



Decarbonisation

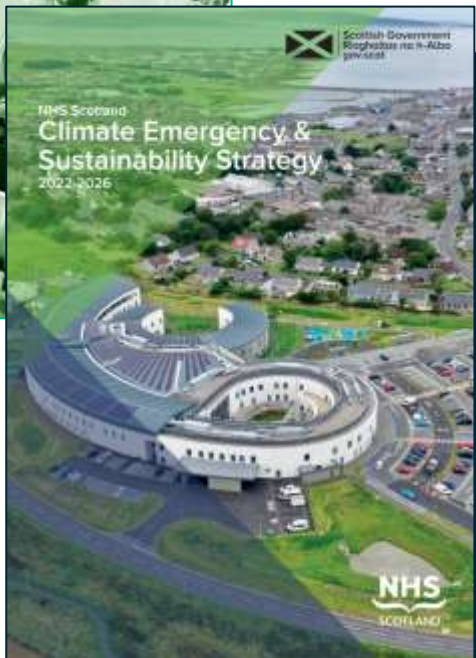
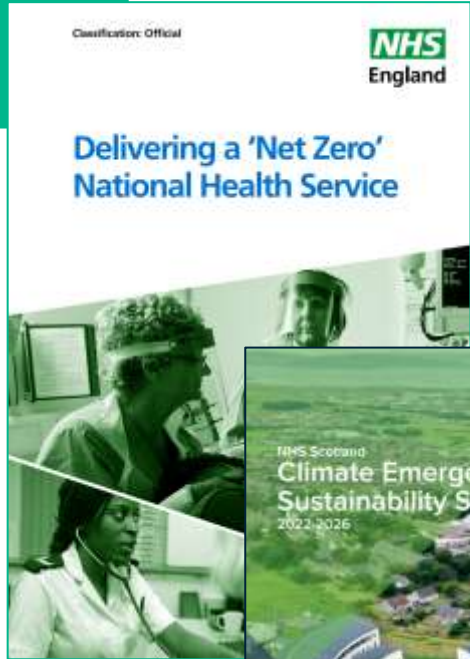


Climate adaptation



Digitalisation





NHS ENGLAND TARGETS (2025)

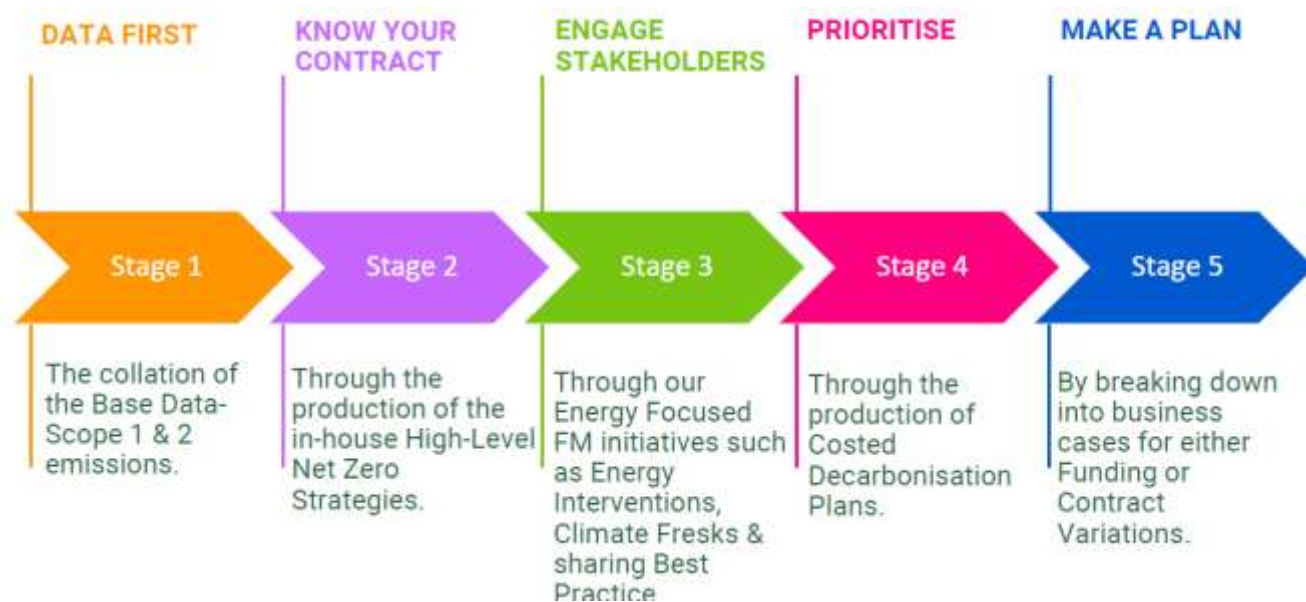
NHS carbon footprint (Scope 1 & 2)

↓ **47%** reduction by 2032

NHS SCOTLAND TARGETS (2025)

Reduce greenhouse gas emissions by at least

↓ **75%** reduction by 2030



Capital funding: key challenges

- GB Energy and NHS scheme for NHS solar and/or battery
- Scottish Public Sector Energy Efficiency Loan Scheme
- NHS Estates Safety Fund

New Hospital Programme



46 Hospitals
(out of 1,100)
Hospital 2.0

Future PFI/PPP



Community Health
Centres
Decarbonisation



Capital Departmental Expenditure Limit (CDEL) refers to the maximum amount of capital expenditure that a government department is authorised to incur within a specific period.

This limit is set to ensure fiscal responsibility and budget adherence.

Solar PV + battery storage integrated solutions



Be Prepared

- Business cases up to date
- Contracts / DoV
- Energy Management



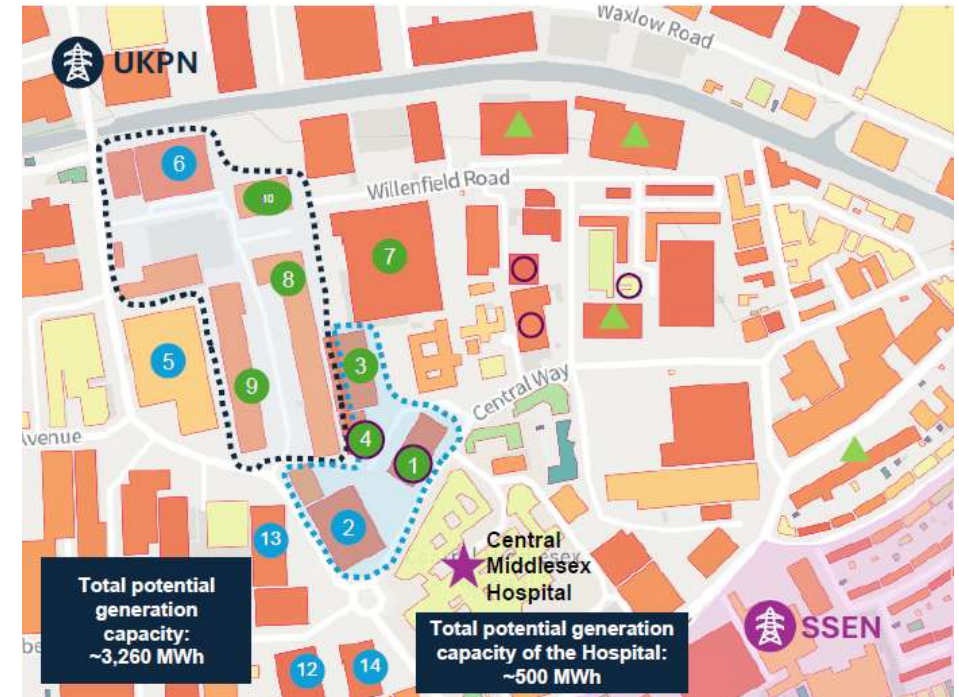
Car Ports & Roofs

- GB Energy and NHS scheme
- Battery Storage
- Supply Chain volatility



Microgrids / Private Wire

- Zero Carbon Accelerator
- Cambridge University Hospital



Low carbon heat networks



Adaptation in preparation

- Temperature optimisation study
- Heat pump counterfactual study



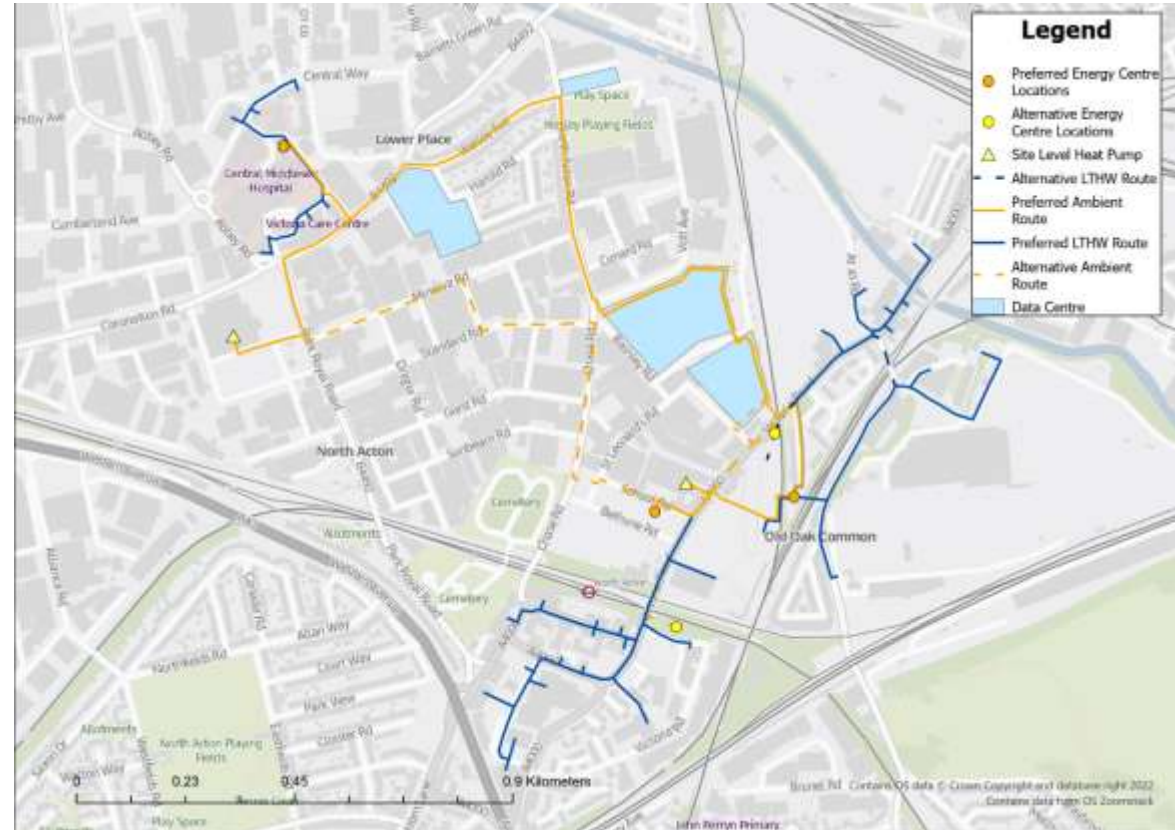
Capex

- Green Heat Network Fund
- Heat Network Efficiency Scheme
- DESNZ technical support



Opex

- Reducing load
- Spark Gap



Electrification of hospitals



Pontefract

PFI

Mid Yorkshire Teaching NHS Trust awarded a government grant (PSDS phase 4) to transform Pontefract Hospital to all electric.

- Pontefract Hospital's main building and the pathology building at Pinderfields Hospital in Wakefield will be decarbonised.
- Equans is proceeding with the design.
- Project Co is preparing the contracts to deliver through the existing PFI.



Seasonal commissioning & optimisation

Initial seasonal commissioning impact on energy

Design	49GJ/100cu.M
Handover	66GJ/100cu.M
Nov 25	59GJ/100Cu.M
Now	53-55GJ/100Cu.M

Optimisation & quick wins

- ✓ Ventilation downturns (especially theatres)
- ✓ NOX
- ✓ CHP
- ✓ LED and lighting control
- ✓ Billing validation
- ✓ Productivity-rooms



Climate adaptation in healthcare

Task force on Climate-related
Financial Disclosures (TCFD)
Phase 3



Assessing and mitigating
climate risks



Enhancing
resilience



Ensuring patient comfort and
safety during extreme
weather events

Leeds Teaching Hospitals NHS Trust

- **1st NHS trust** to be assessed for climate-related damage to buildings
- **8 buildings across two estates** assessed including advanced climate modelling, building engineering analysis and bespoke recommendations
- **30+ rooms analysed** across the estates with on-site BMS and FM operative support



Making your estate & operations resilient to climate risks



Identify the risks



Why do you think climate adaptation is important to your NHS Trusts?



What are the biggest barriers your organisation faces in implementing climate adaptation strategies?



Does your organisation have a documented plan for climate adaptation?

Climate Adaptation 5-step plan



Climate Adaptation Awareness & Maturity Survey

01



Understand your risk through climate intelligence & analytics

02



Building level vulnerability assessments

03



Adaptation strategy & feasibility

04

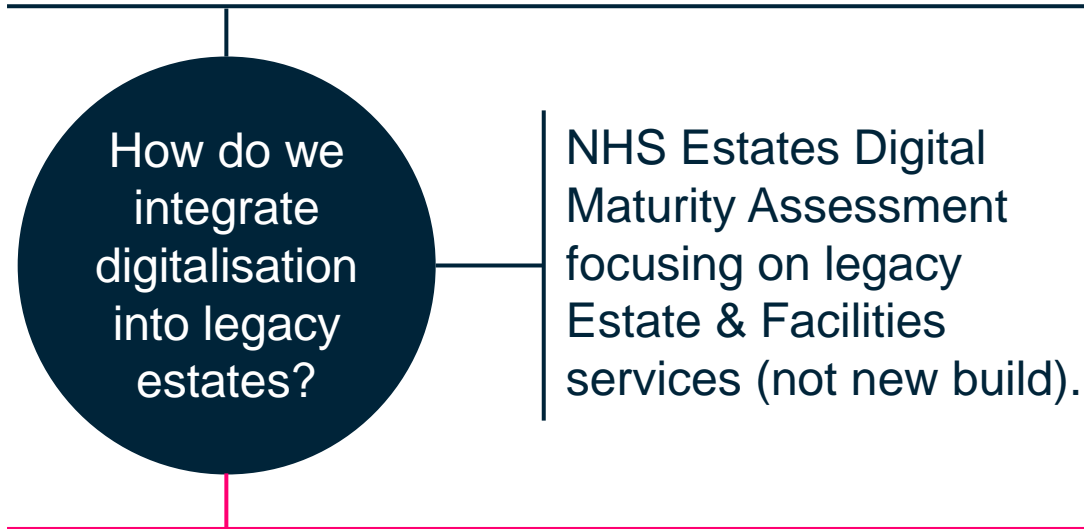


Adaptation measure design, implementation & monitoring solutions

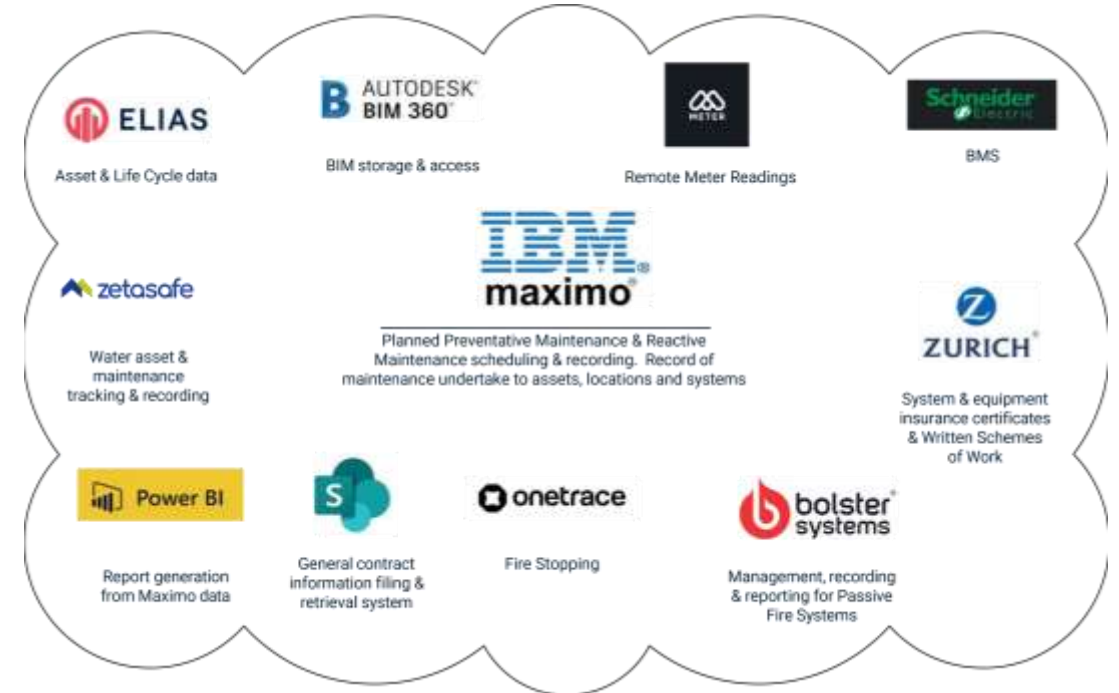
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Digital transformation

Up to £10 billion in NHS technology and digital transformation by 2028-29.
50% increase from 2025-26.



Currently no pot of money to fund, an equivalent to the Estates Emergency Fund



Smart hospital - developing an over-arching digital strategy



KPIs for patient care, experience and overall satisfaction

- Overall patient satisfaction
- Waiting time
- Staff responsiveness



KPIs medical staff

- Bed turnover rate
- Nursing staff productivity
- Equipment turnover rate



KPIs for hospital services

- Energy efficiency
- Carbon reduction
- Space utilisation
- One version of the truth

