



# NHS Long Term Plan

## **Tackling Climate Change Delivering a net Zero NHS**

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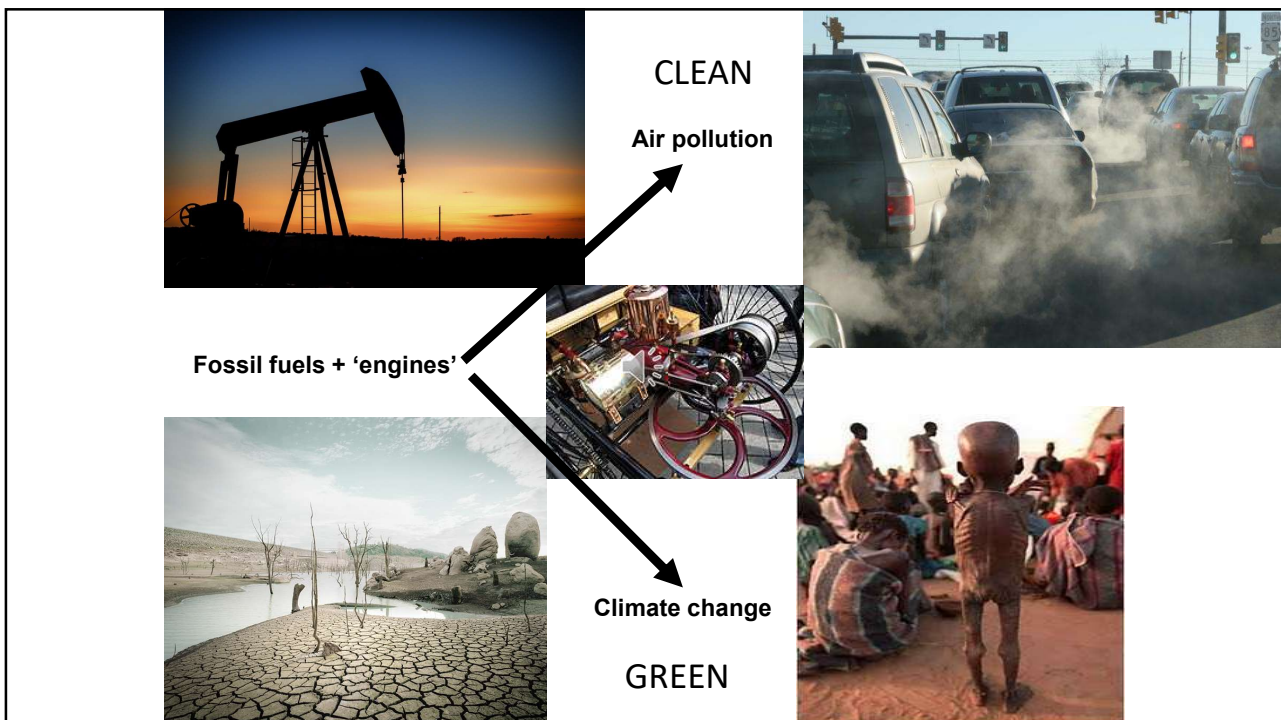
## Content and learning objectives

- Brief climate change overview.
- Health implications – short and long term.
- Delivering a Net-Zero NHS content.
- Action for Paediatricians.

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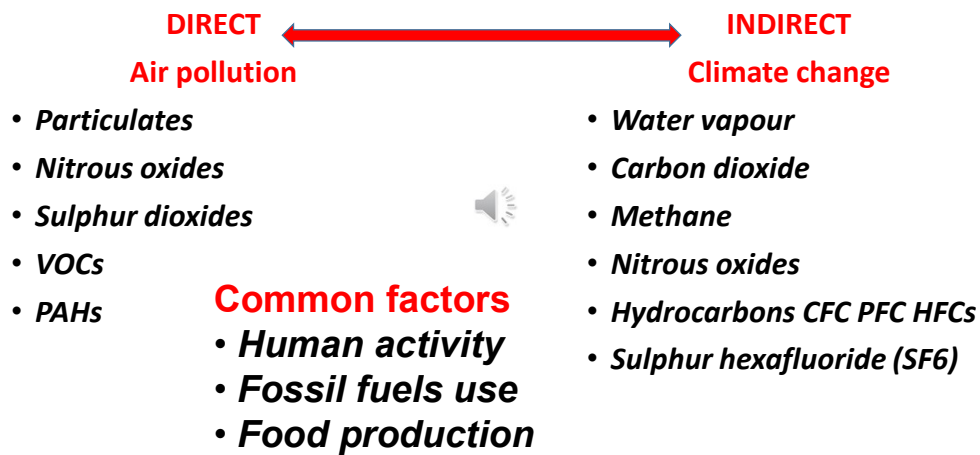


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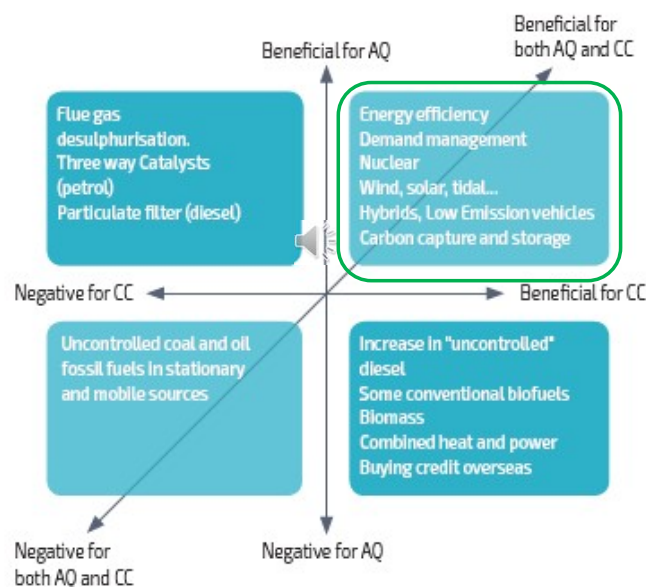
## The direct-indirect spectrum



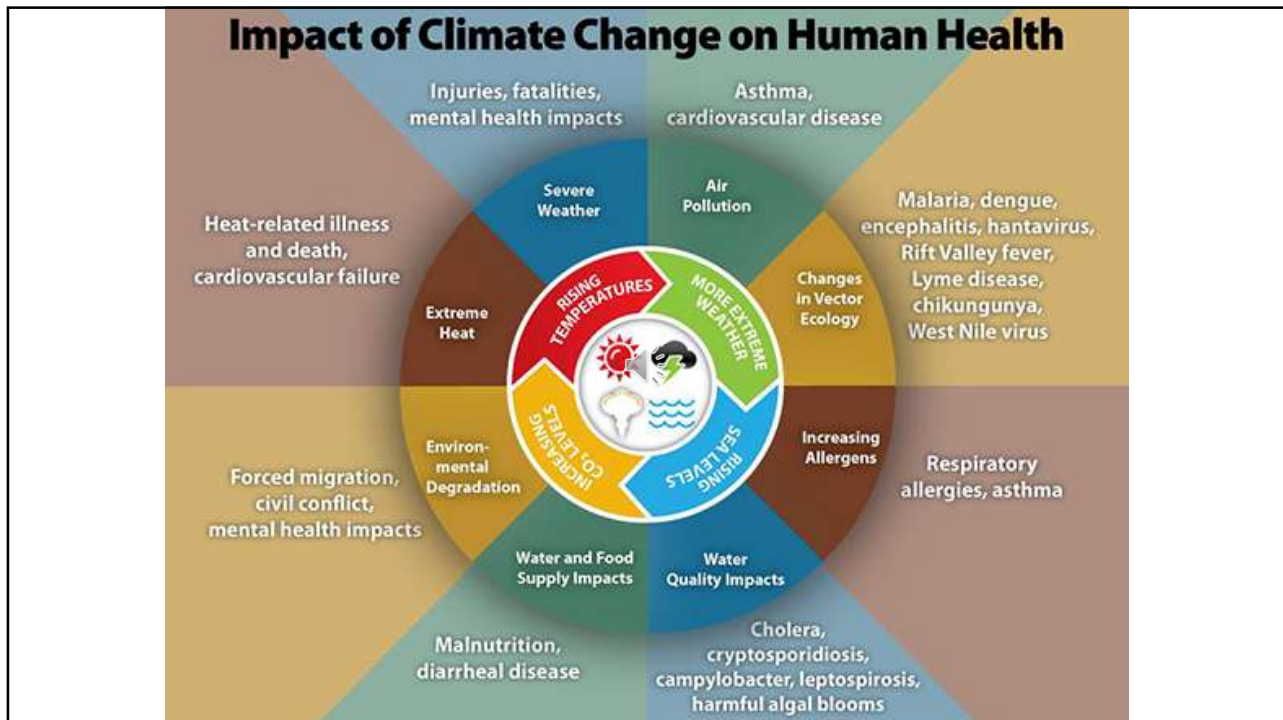
“the drivers of climate change are also the drivers of ill health and health inequalities”.

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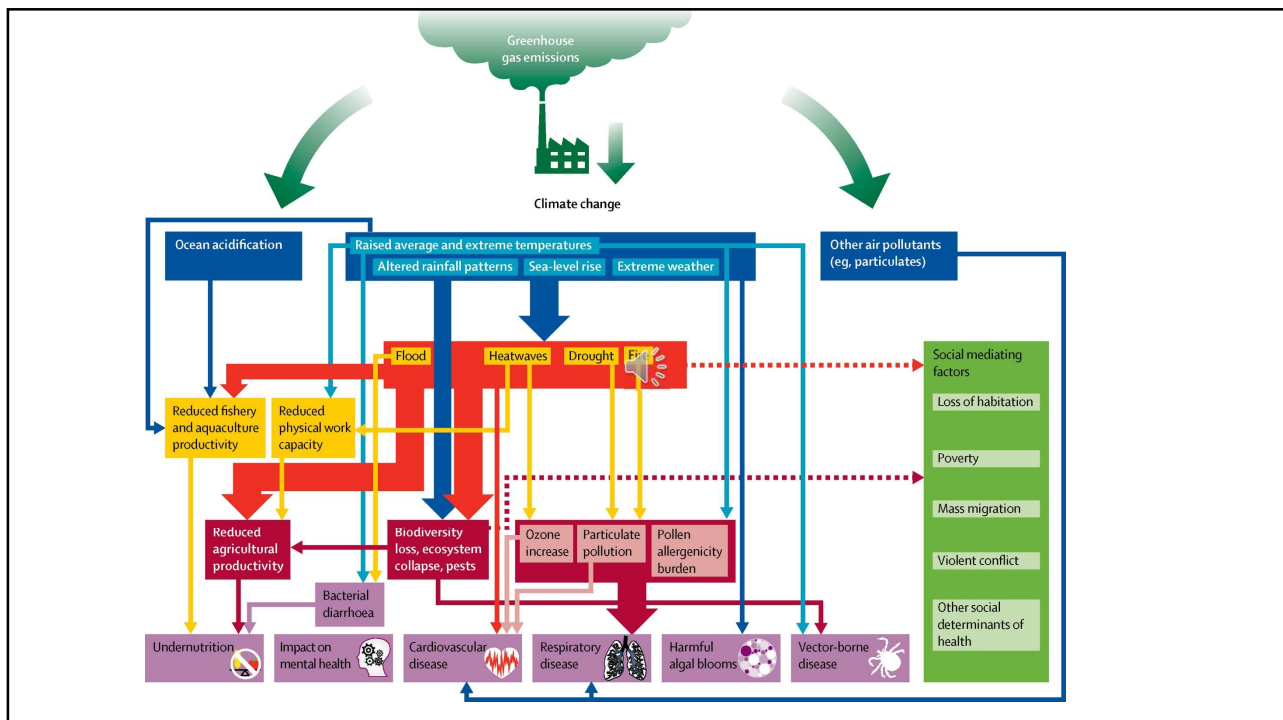
## Air quality (AQ) v Climate change (CC)



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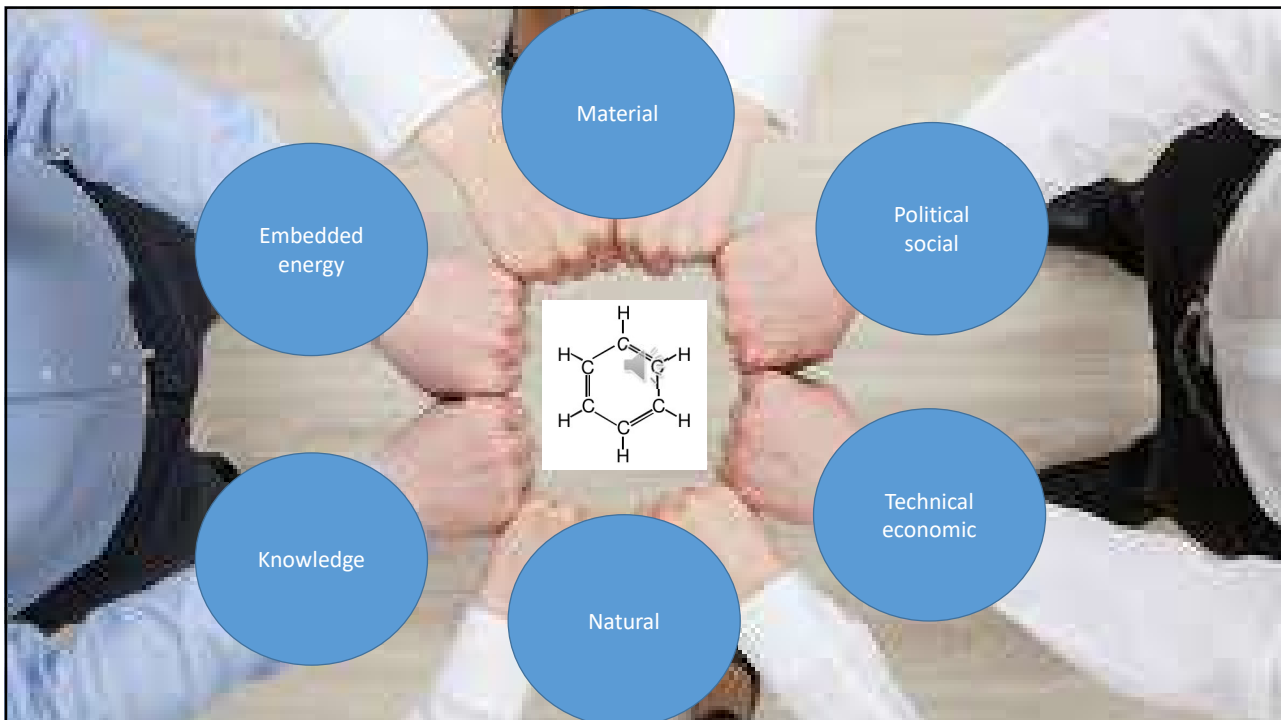


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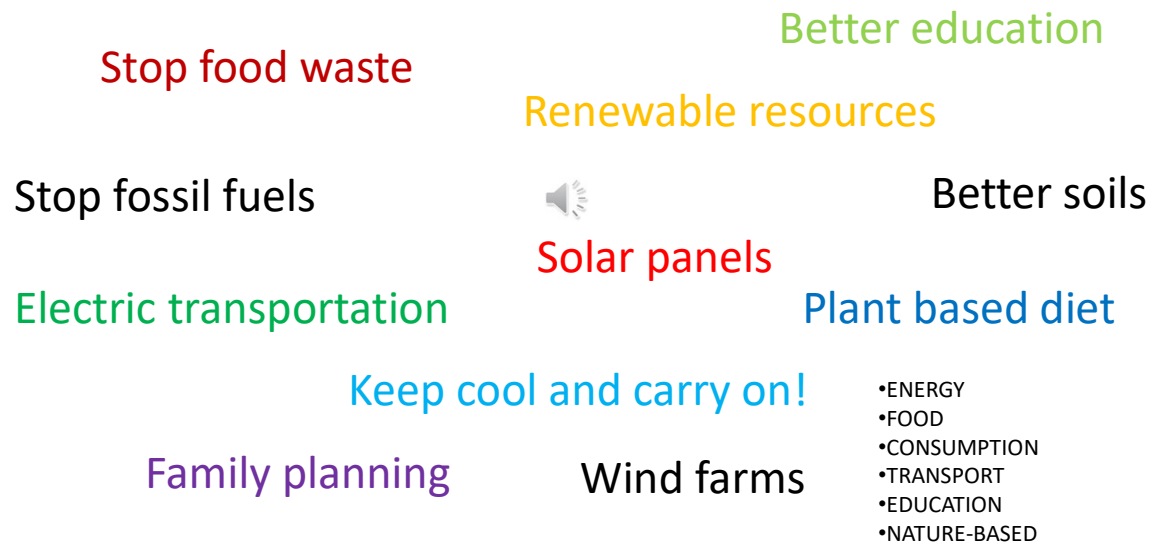


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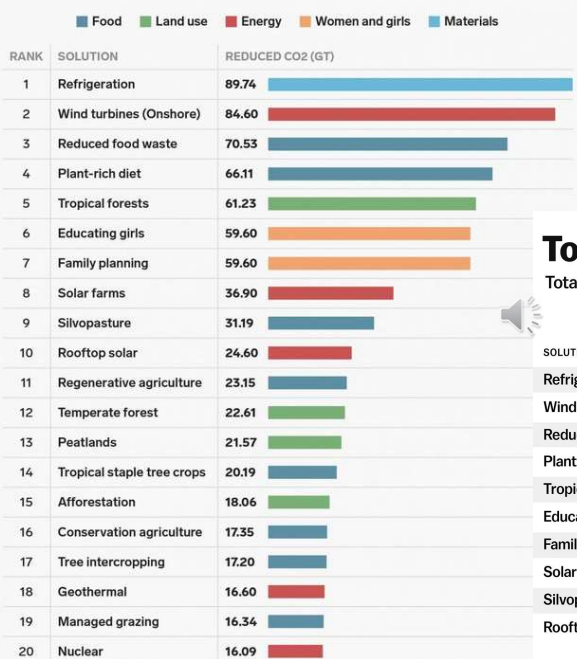
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# Climate change solutions



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## The top 20 things we can do to cool down the planet



## Project Drawdown

*The Most Comprehensive Plan  
ever proposed to  
Reverse Global Warming.*

## Top 10 solutions to climate change

Total gigatons of CO2-equivalent emissions that could be reduced by 2050

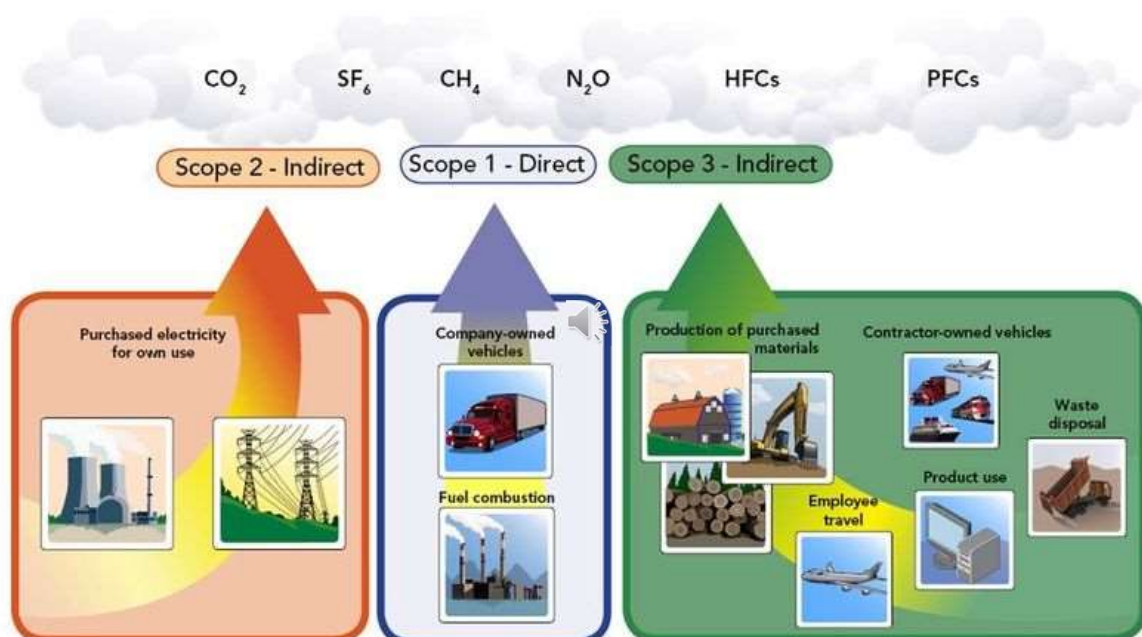
SOLUTION		PLAUSIBLE SCENARIO		DRAWDOWN SCENARIO		OPTIMUM SCENARIO
Refrigerant Management	1	89.74	2	96.49	3	96.49
Wind Turbines (Onshore)	2	84.60	1	146.50	1	139.31
Reduced Food Waste	3	70.53	4	83.03	4	92.89
Plant-Rich Diet	4	66.11	5	78.65	5	87.86
Tropical Forests	5	61.23	3	89.00	2	105.60
Educating Girls	6	59.60	7	59.60	8	59.60
Family Planning	7	59.60	8	59.60	9	59.60
Solar Farms	8	36.90	6	64.60	7	60.48
Silvopasture	9	31.19	9	47.50	6	63.81
Rooftop Solar	10	24.60	10	43.10	13	40.34

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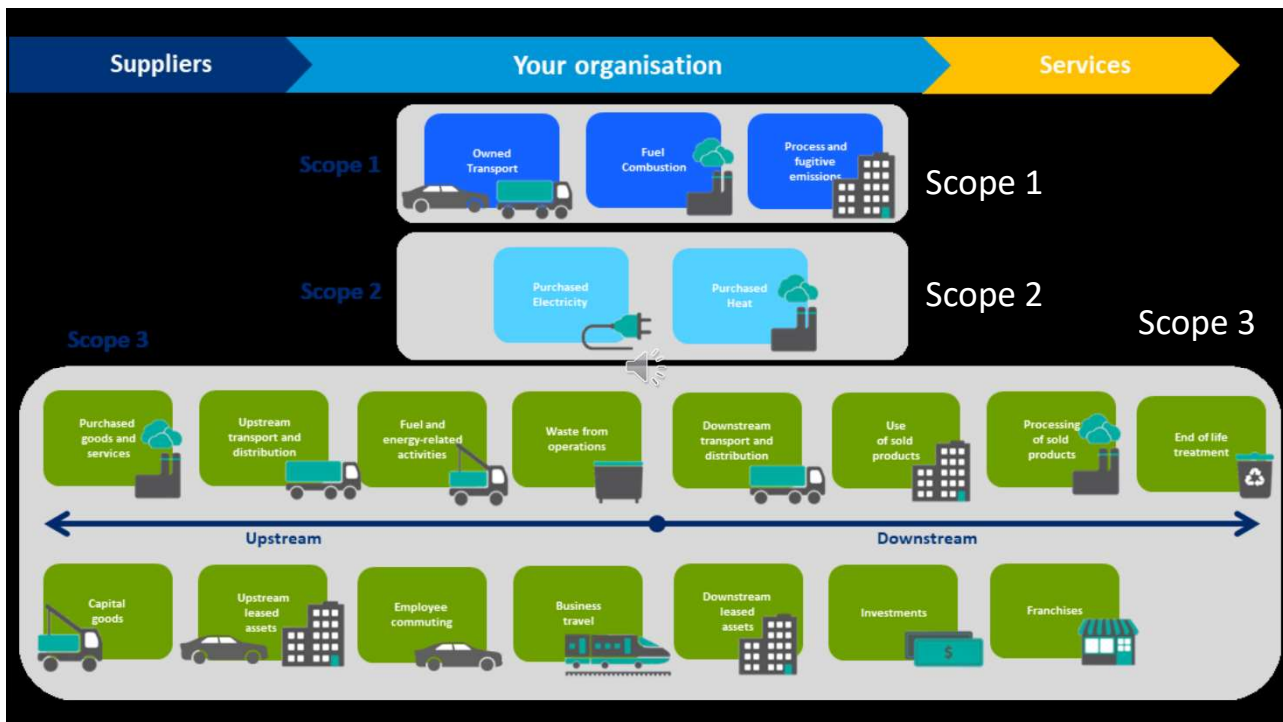
## Delivering a 'Net Zero' National Health Service



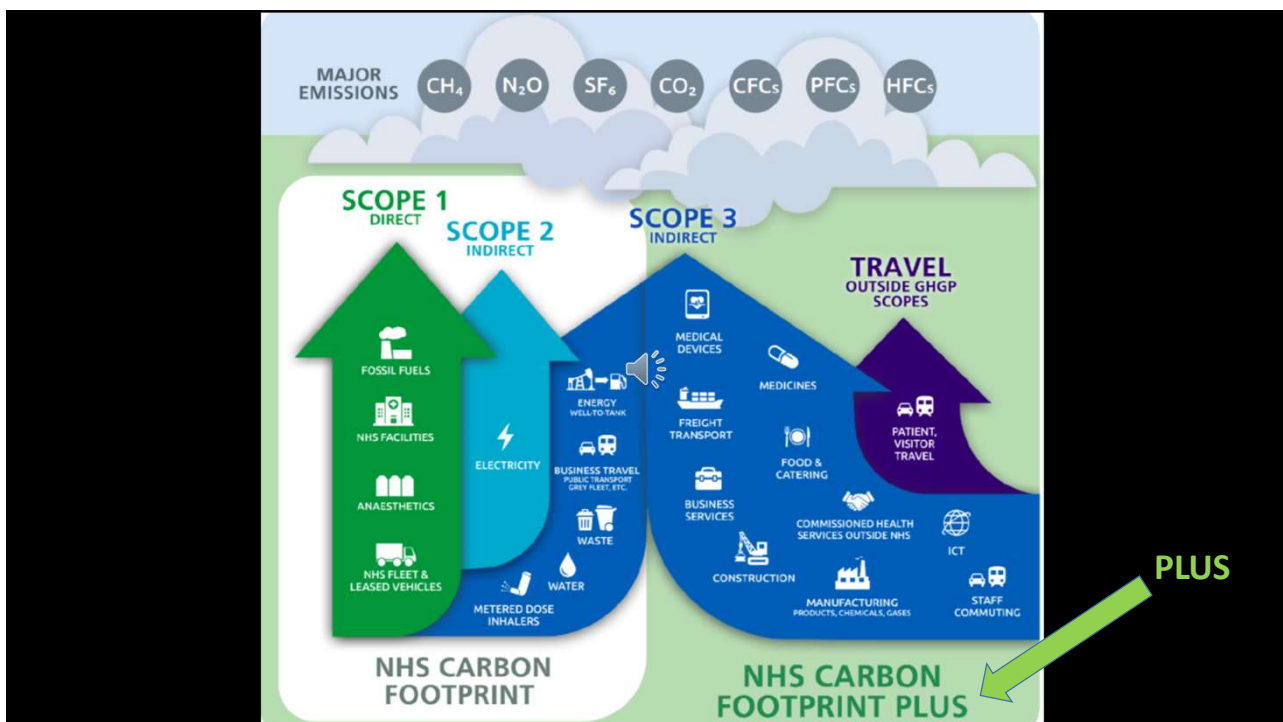
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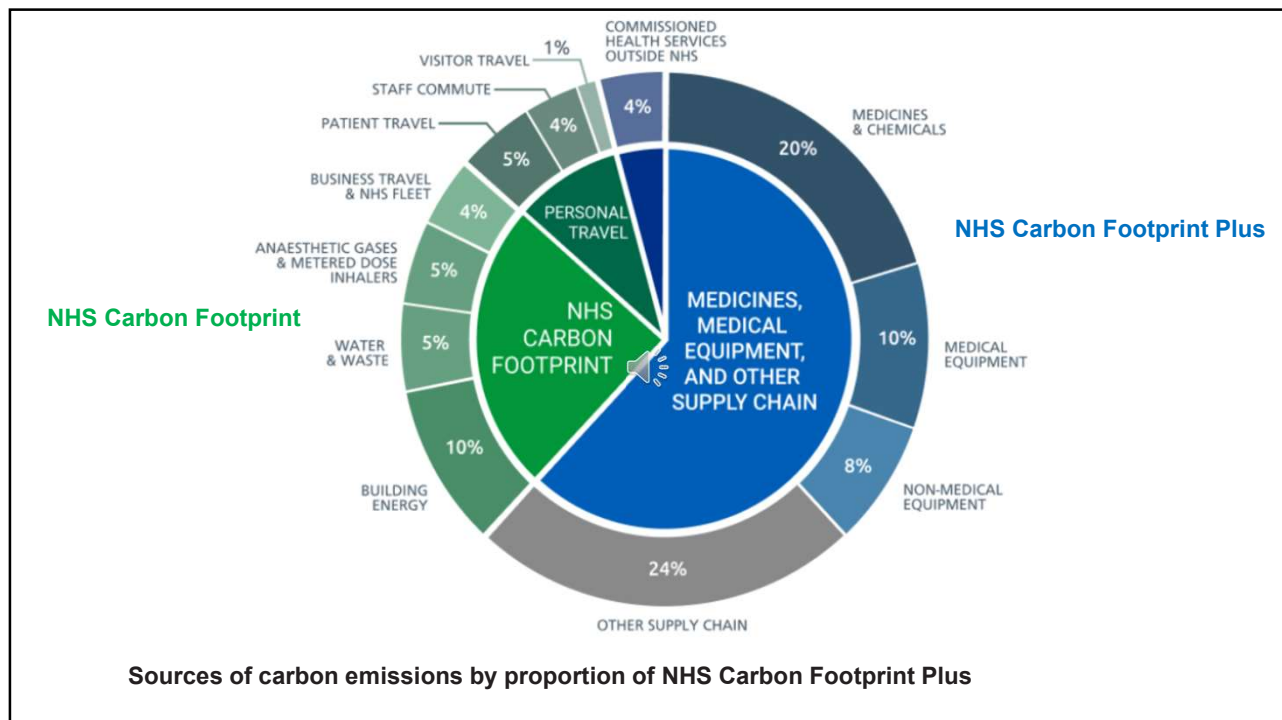


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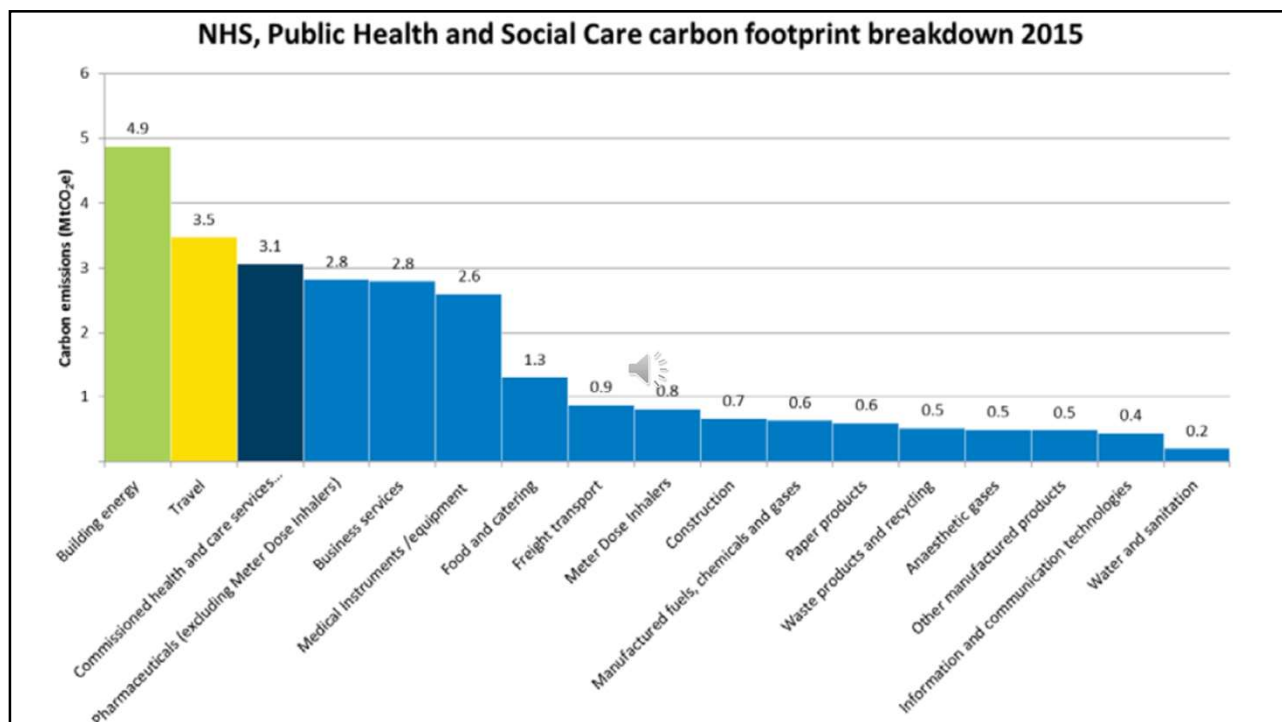


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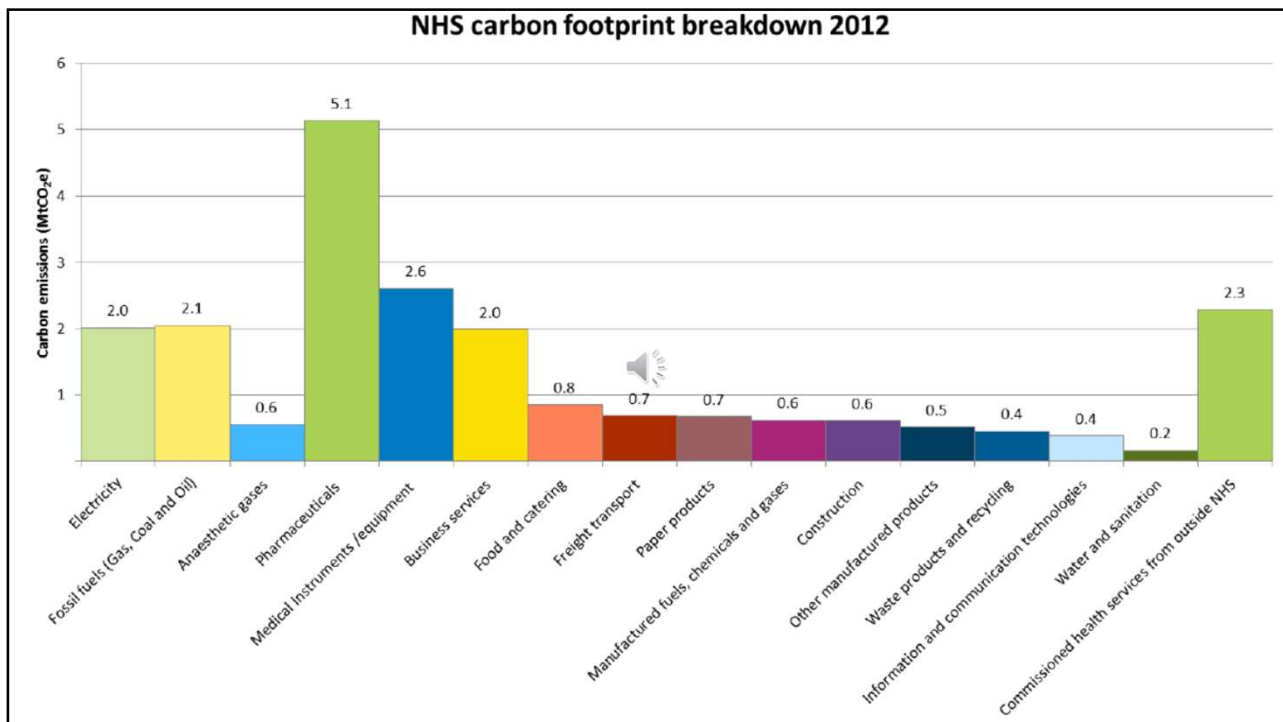




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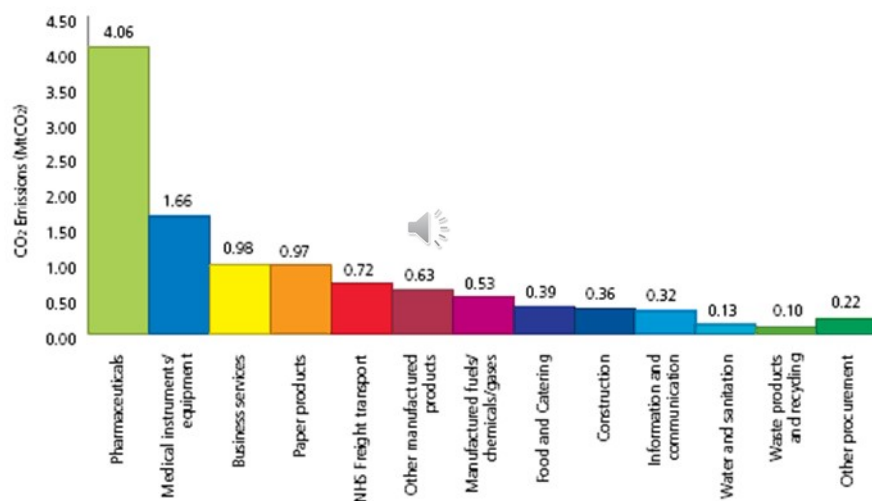


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## NHS procurement emissions 2004



Breakdown of NHS England 2004 procurement emissions, NHS Sustainable Development Unit

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## Greenhouse Gas Protocol (GHGP)

- **GHGP scope 1:** Direct emissions from owned or directly controlled sources, on site
- **GHGP scope 2:** Indirect emissions from the generation of purchased goods and energy.
- **GHGP scope 3:** All other indirect emissions that occur in producing and transporting goods and services, including the full supply chain.

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## 8 Steps to decarbonise (1-4)

1. Our care: developing new models of care as part of the NHS Long Term Plan.
2. Our medicines and supply chain: working with our suppliers to meet net zero emissions in a decade.
3. Our transport and travel: a shift to zero emission vehicles by 2032.
4. Our innovation: ensuring the digital transformation agenda aligns with being a net zero NHS.

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## Digital health technology

- Smartphones and wearables
- At-home or portable diagnostics
- Smart or implantable drug delivery mechanisms
- Digital therapeutics and immersive technologies
- Genome sequencing
- Artificial intelligence
- Robotics and automation
- The connected community – big data

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## 8 Steps to decarbonise (5-8)

5. Our hospitals: the construction of 40 new “net zero hospitals” and a new net zero carbon hospital standard.
6. Our heating and lighting: insulation, low energy lighting, smart heating, renewables.
7. Our adaption efforts: by building resilience and adaption into the heart of our net zero agenda.
8. Our values and governance: updating the NHS Constitution and launching for a greener NHS with measures to monitor progress in every trust.

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## At a glance.....

- estates and facilities
- travel and transport
- supply chain
- medicines
- **sustainable models of care**
- workforce,
- **leadership** networks
- funding and finance mechanisms

## NHS Long Term Plan

Pathways/networks  
Prevention  
Participation  
QI +++ “value”  
Population health

Skip to Annex 3 Summary of the net zero call for evidence !

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## Estate and facilities


- upgrade our buildings – insulation, low energy lighting
- on-site renewable energy and heat generation
- 100% renewable energy from April 2021
- optimise the way the NHS uses its buildings
- reduce emissions in the primary care estate
- increasing green space and trees on NHS sites

Green Impact for Health Toolkit Royal College of General Practitioners

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## Energy and direct emissions

Category	Carbon emissions breakdown	2012 (MtCO <sub>2</sub> e)	%
Building energy use and direct emissions	Electricity 	2.0	8%
	Fossil fuels (Gas, Coal and Oil)	2.1	8%
	Anaesthetic gases	0.6	2%

Heat pumps  
Combined heat and power

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## Travel and transport

- Car pool/sharing
- Electrification of the NHS transport fleet. 
- Cycling, walking and shifting modes of transport.
- Public transport.

*3.5% (9.5 billion miles) of all road travel in England relates to patients, visitors, staff and suppliers to the NHS,*

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## Travel emissions

Category	Carbon emissions breakdown	2012 (MtCO <sub>2</sub> e)	%
Travel	Patient	1.4	6%
	Visitor	0.4	2%
	Staff commute	0.6	2%
	Business	0.8	3%

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## Supply chain

- Pharmaceuticals
- Surgical single use items
- NHS Plastics Reduction Pledge
- Walking aids
- Paper
- Low-carbon alternatives/substitutes
- Suppliers are responsible for decarbonising their own processes

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## Procurement

Category	Carbon emissions breakdown	2012 (MtCO <sub>2</sub> e)	%
Procurement of goods and services	Pharmaceuticals	5.1	21%
	Medical Instruments /equipment	2.6	11%
	Business services	2.0	8%
	Food and catering	0.8	3%
	Freight transport	0.7	3%
	Paper products	0.7	3%
	Manufactured fuels, chemicals and gases	0.6	3%
	Construction	0.6	2%
	Other manufactured products	0.5	2%
	Waste products and recycling	0.4	2%
	Information and communication technologies	0.4	2%
	Water and sanitation	0.2	1%

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## Medicines

- anaesthetic gases (2% of emissions)
- effective capture, destruction or reuse of these gases;
- reduction in the atmospheric release from leftover nitrous gas canisters.



- inhalers (3% of emissions) dry powder inhalers (DPIs).
- Programme to return inhaler devices to pharmacies for green disposal

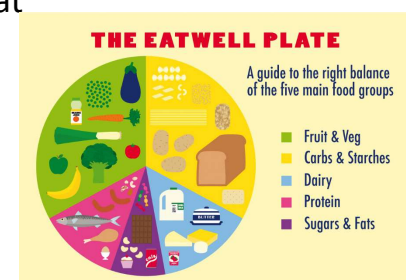
- reduce polypharmacy
- unused prescription medicines - NHS cost estimated £300million  
account for 25% of NHS emissions

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## Food, catering and nutrition (farm to fork)

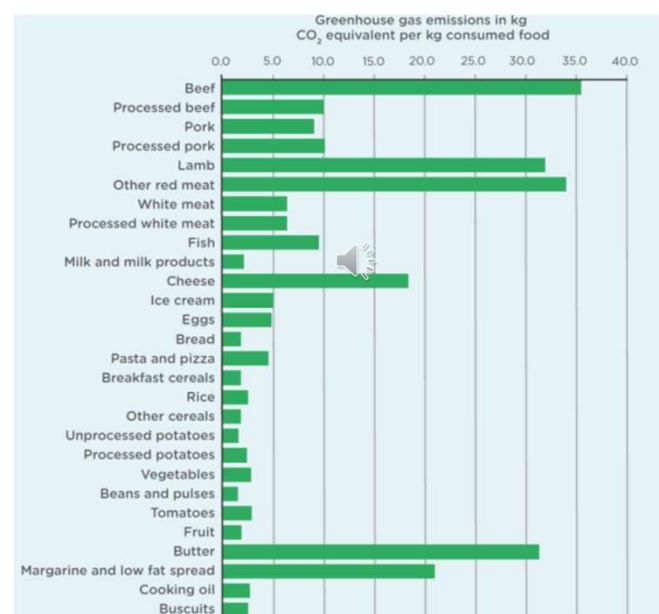
- new national standards for healthcare food for patients, staff and visitors
- sustainable production and transportation practices,
- sourcing local supplies of food,
- the use of seasonal produce,
- increased use of sustainably sourced fish and meat
- limit food waste
- EatWell plate

3-6% of NHS total emissions.



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## Carbon footprints of different food groups



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## Research and innovation

- all innovation support programmes to articulate the environmental impact
- embed sustainability in assessment criteria into decision-making processes
- embed net zero into the AHSNs' business model
- use the AAC Horizon Scanning Function to identify the future innovations which can support efforts to transition to net zero.
- NHS consider offsetting and mechanisms to secure negative emissions.



Academic Health Science Networks (AHSNs)  
Accelerated Access Collaborative (AAC).

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## Sustainable models of care (1)

- a 'new service model for the 21st century'
- pathways and networks – right care, right place, right time etc.
- earlier detection and quicker testing, and interventions
- boosting 'out-of-hospital' care; avoiding unnecessary hospital visits/admissions
- further progress on care quality and outcomes – comorbidity prevention
- proactive anticipatory personal plans
- a digital, low-carbon transformation

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## Sustainable models of care (2)

- life course pathways
- empowering people to have more control over their health – participation
- comorbidity and disadvantage prevention
- increased the focus on population health management
- more NHS action on health inequalities – tackling health determinants
- improving outcomes and variations in outcomes

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## Workforce, networks and system leadership

- System leadership – vision, communication, integrity, transparency
- Building capability and collaboration in all staff – teams/networks
- Learning culture - spreading and scaling what works
- Embedding sustainability across the NHS and Integrated Health Systems
- Improving recruitment and retention and retirement – staff care

*The time has come for health professionals to be ambitious leaders in combatting the climate and health emergency.*

**Richard Smith**

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## Funding and financial mechanisms

### Carbon footprint

- Data and monitoring - Greener NHS Dashboard.
- Incentives

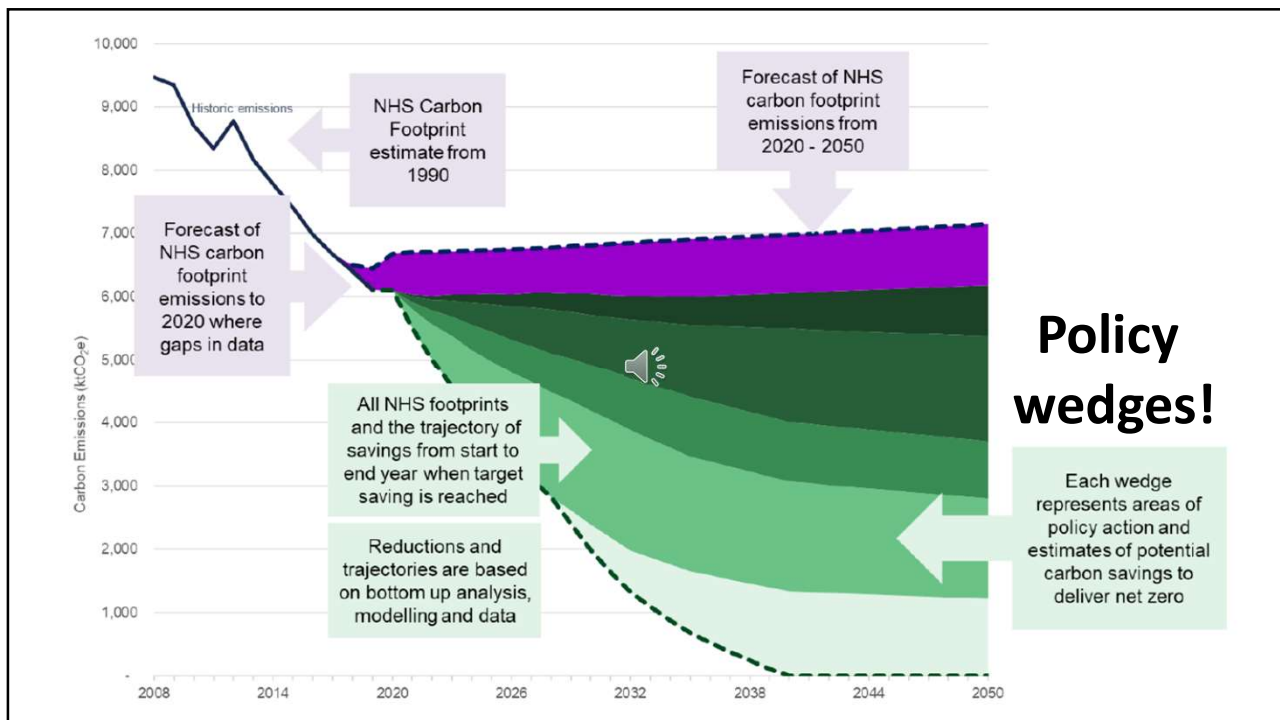


### Clinical care (new models)

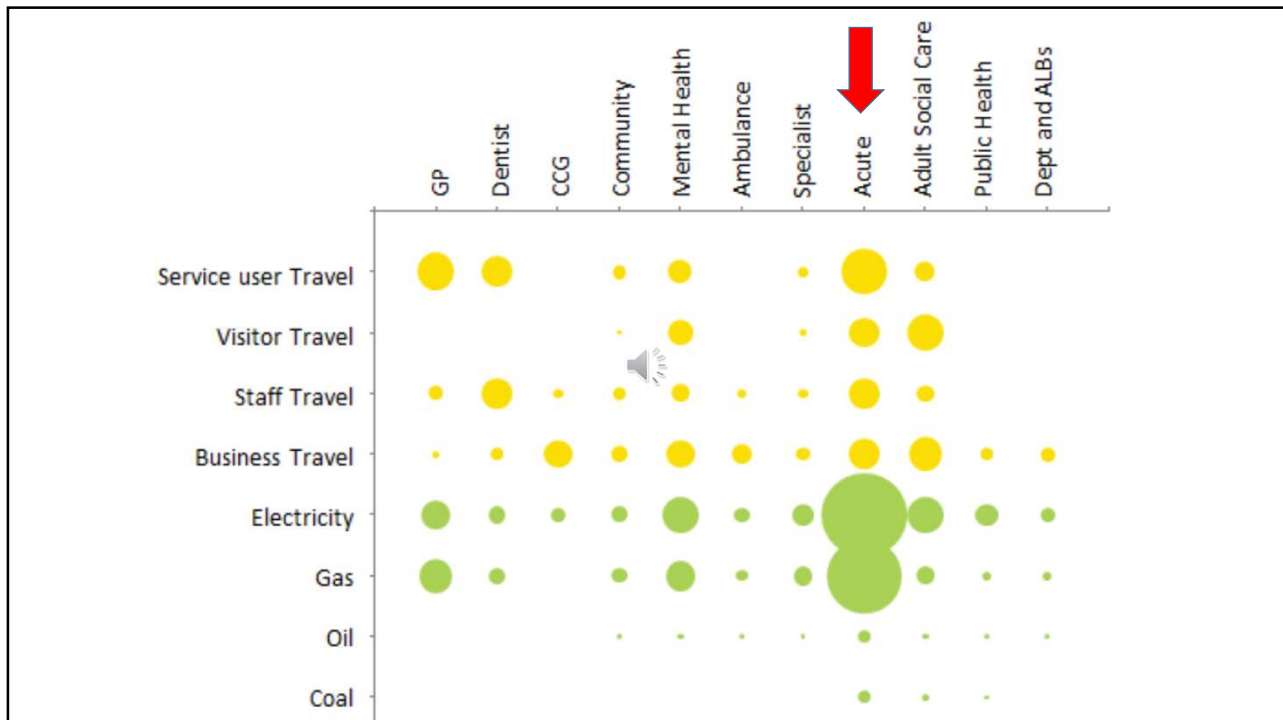
- Programmes of care
- Quality improvement
- Collaborative arrangements - integration

“to mainstream sustainability into the common data pipeline for the system”

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## Next steps – an iterative and adaptive process

- International Advisory Committee will be formed to support the delivery of the NHS Carbon Footprint Plus
- NHS England and NHS Improvement Sustainability Board
- Greener NHS national programme will build on the work of the former Sustainable Development Unit
- Health and Social Care Sector Climate Change Adaptation Reports
- UN hosts Climate Change negotiations (COP26) in Glasgow in 2021

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## Sustainable healthcare

- promotes well-being, protects from hazards
- prioritises prevention
- **designs services effectively/efficiently BACCH FFF**
- creates balance between economic, environmental and social constraints
- uses resources responsibly,
- reduces waste
- embraces low carbon technologies

*The first rule is to “do no harm” and this applies equally to populations and health systems as it does to individual treatments.*

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## The UK Green New Deal



**Decarbonise the UK**

**Create secure jobs**

**Transform the economy**

**Protect and restore**

**Promote global justice**

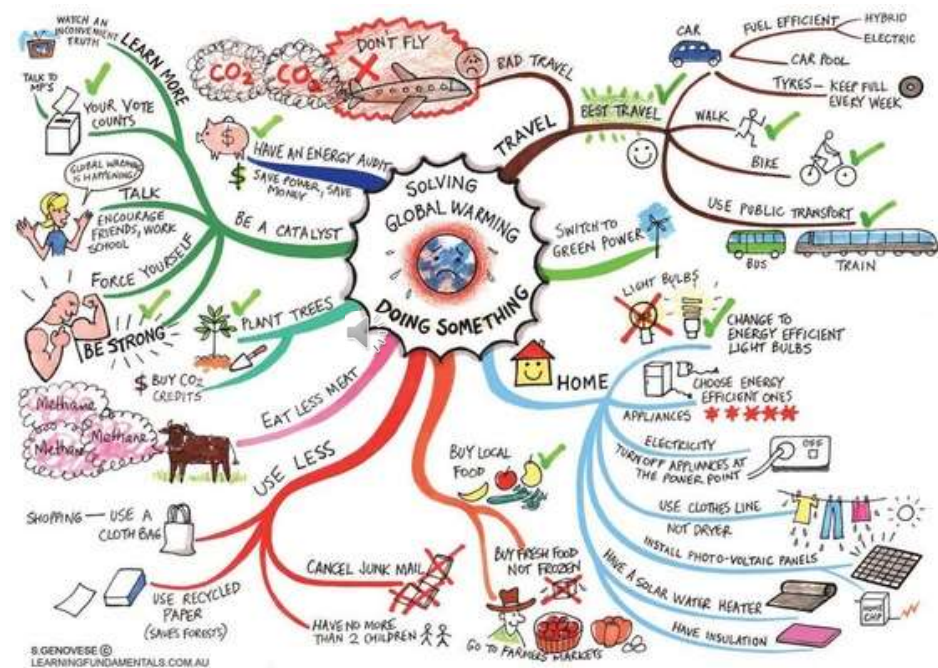
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From the mouths of children

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Thank you  
Ideas to take action



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Extra slides

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Greta Thunberg - inter-generational justice.

*"You've stolen my dreams and my childhood with your empty words and yet I am one of the lucky ones, people are suffering, people are dying, entire ecosystems are collapsing, we are in the beginning of a mass extinction and all you can talk about is money and fairy tales of eternal economic growth. How dare you. We will not let you get away with this, right here, right now, is where we draw the line. The world's waking up and change is coming whether you like it or not."*

We won't get to net zero without innovation, investment and profit.

Mark Carney

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## Lancet - eco-anxiety

“A growing number of young people are worried, depressed, and angry about climate change. It isn't hard to imagine why. It's stressful enough to navigate emotional development and shifting identity, without the added apocalyptic backdrop of the COVID-19 pandemic and climate crisis, and the frustration that those in positions of power and authority are not taking effective steps to tackle them. Our deferred moral and ethical responsibilities land on children's shoulders”.

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## Terra Carta



The Terra Carta aims to provide an integrated roadmap towards an inspiring, inclusive, equitable, for the sake of present and future generations;

one that will harness the power of nature combined with the transformative power, innovation and resources of the public and private sectors.

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# Solar Geoengineering Research

