



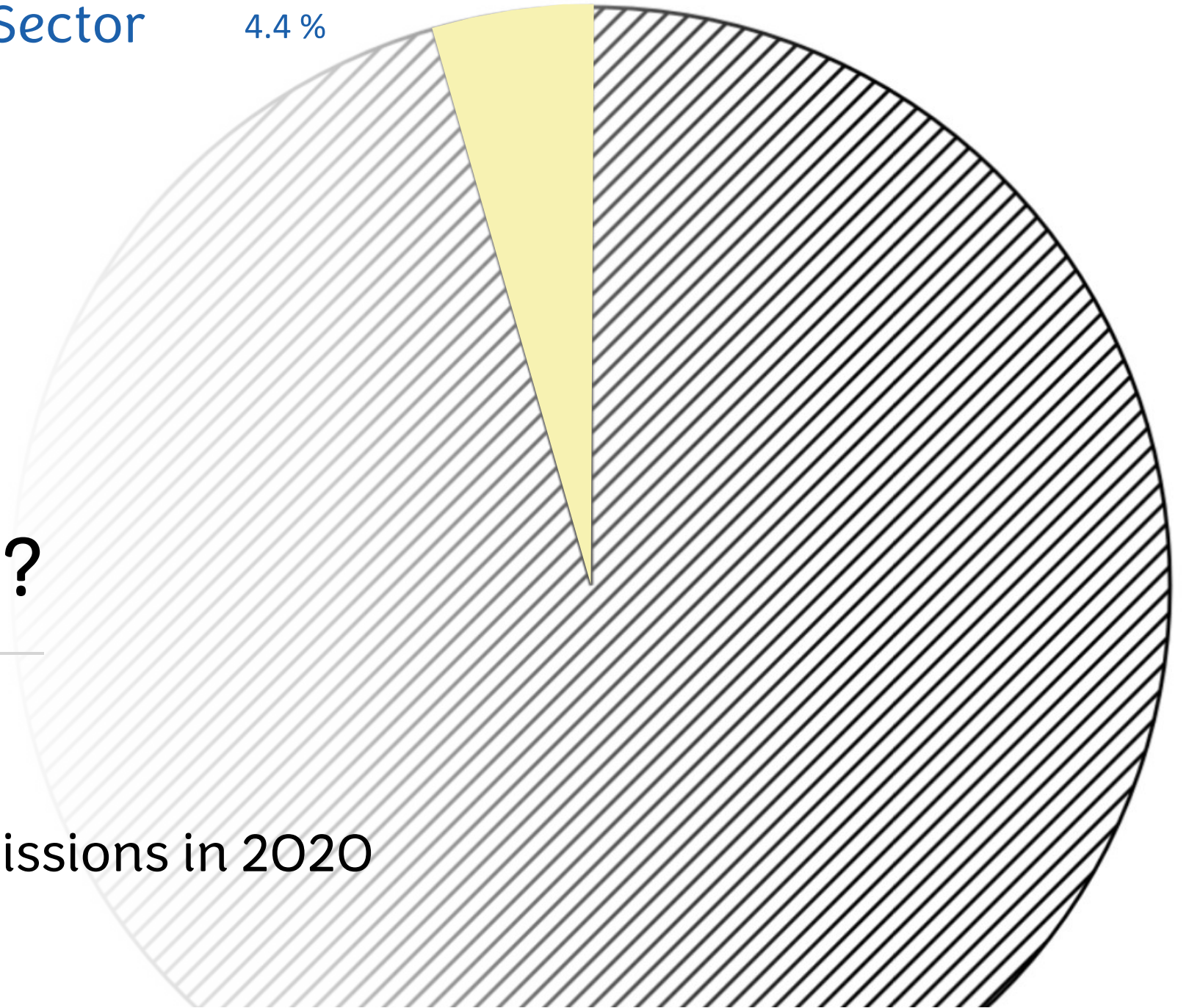
Healing without Harming

The Carbon Challenge in Healthcare

Presented by: Asma Amamou
Date: 09/09/2025

Healthcare Sector

4.4 %



Did you Know ?

From global GHG emissions in 2020

GHG Emissions by Country

Countries

Healthcare Sector

Rest of world

China

United States

India

EU27

Brazil

20.7 (38.4%)

15.7 (29.2%)

6.0 (11.2%)

3.9 (7.3%)

3.6 (6.7%)

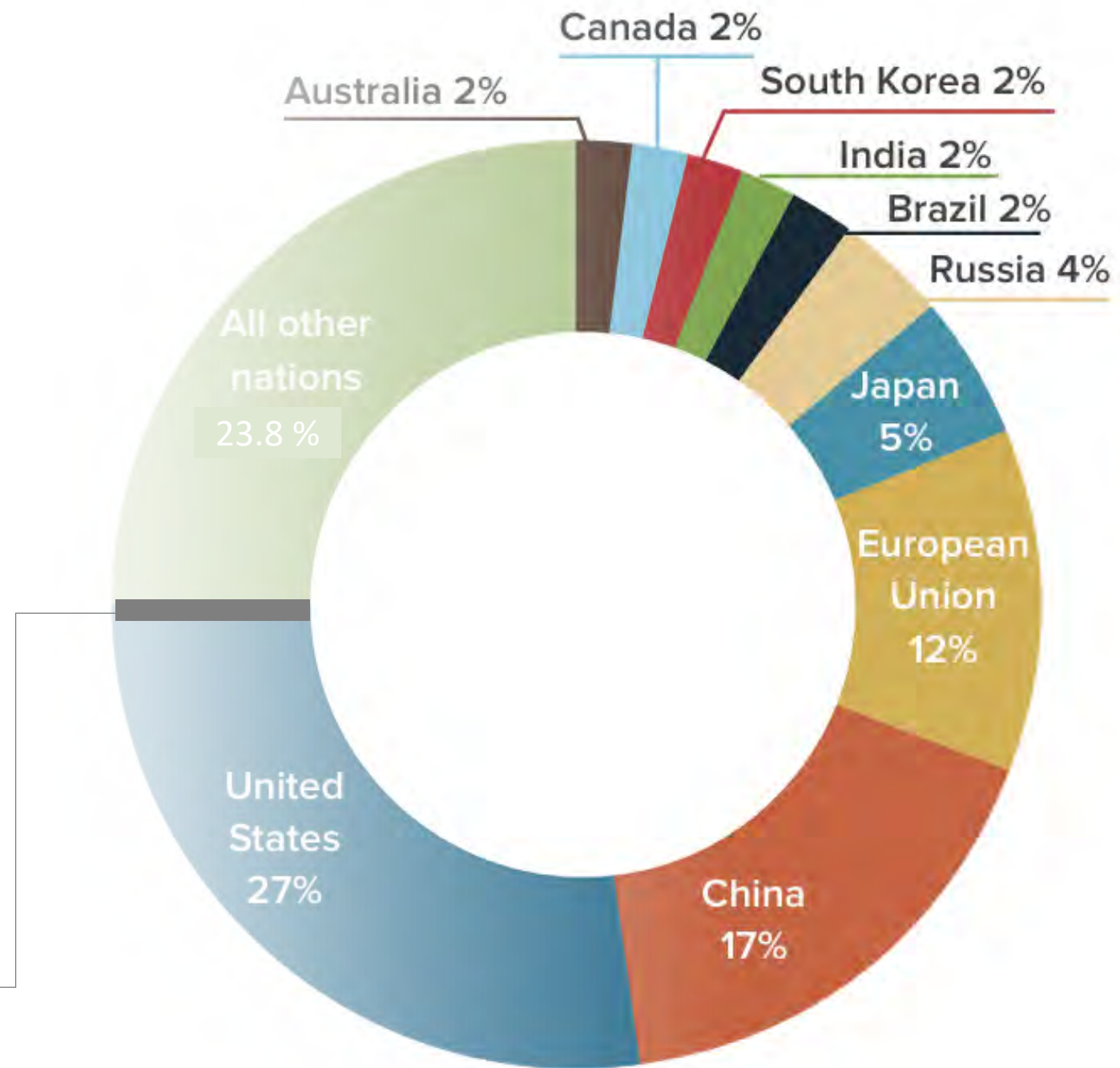
2.4 (4.4%)

1.3 (2.4%)

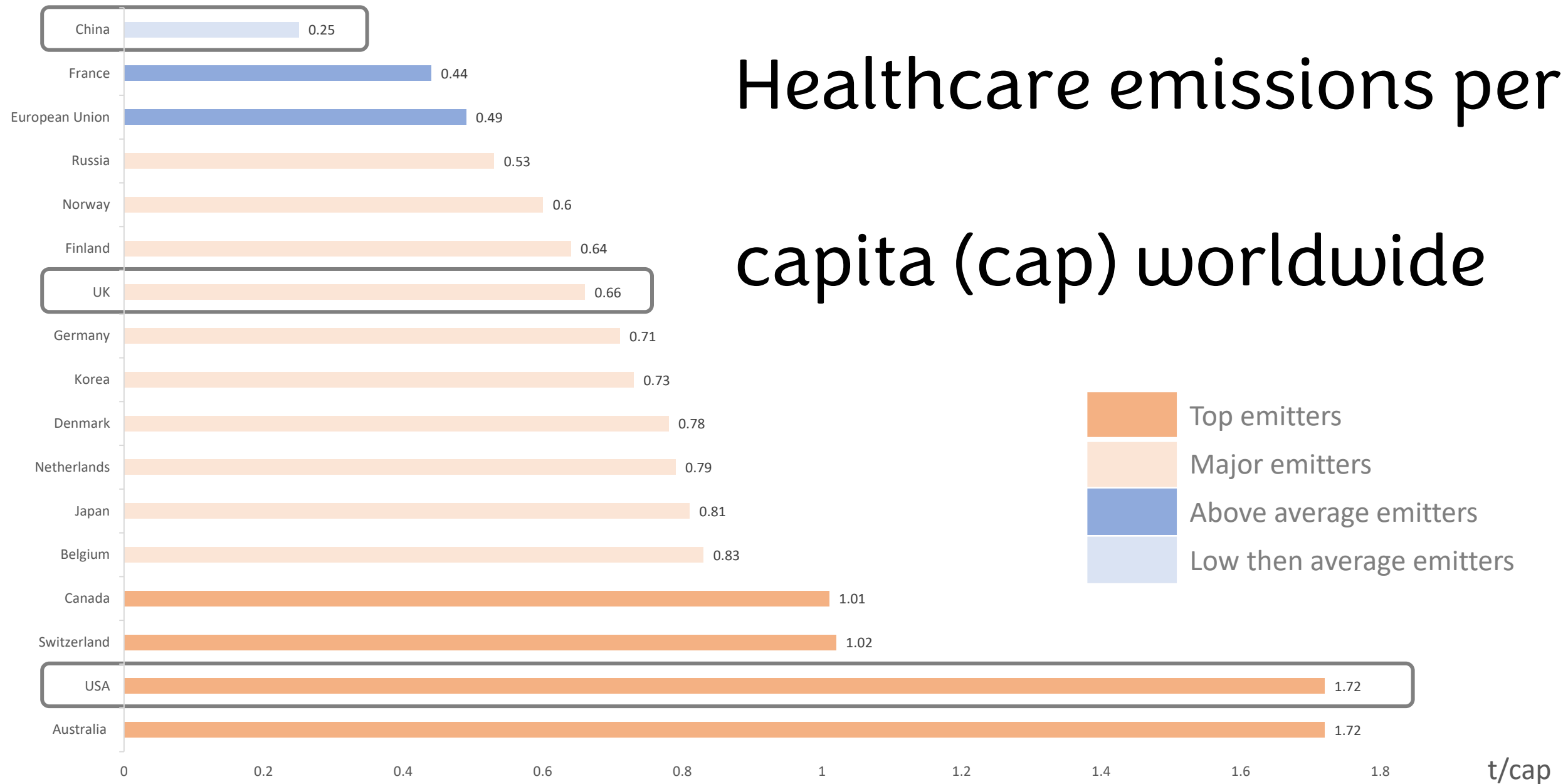
GHG (Gt CO2eq)

Top 10 emitters as % of global health care footprint

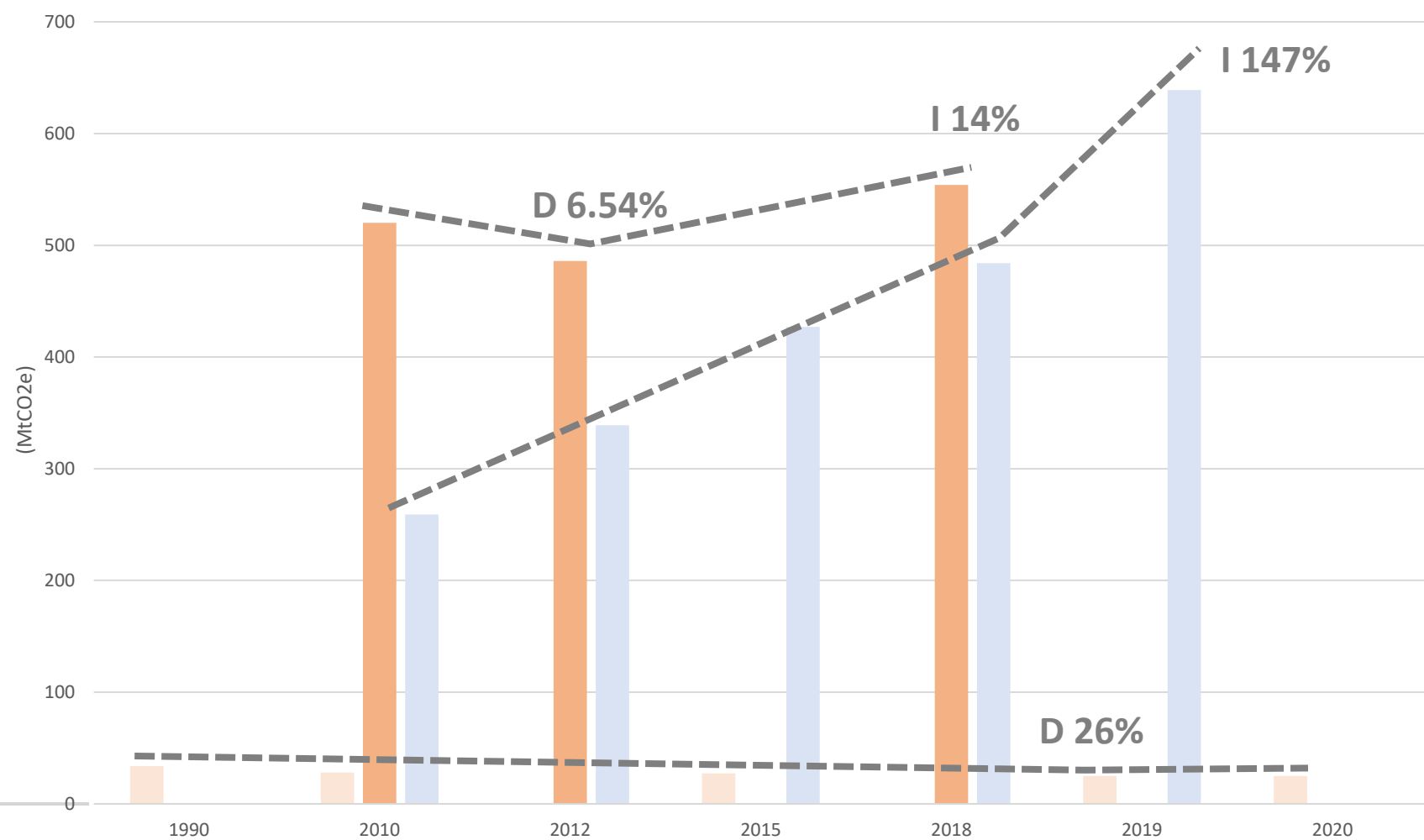
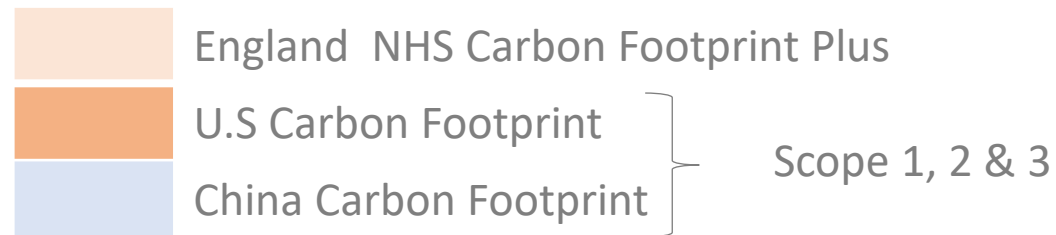
The UK 1.2 %



Healthcare emissions per capita (cap) worldwide



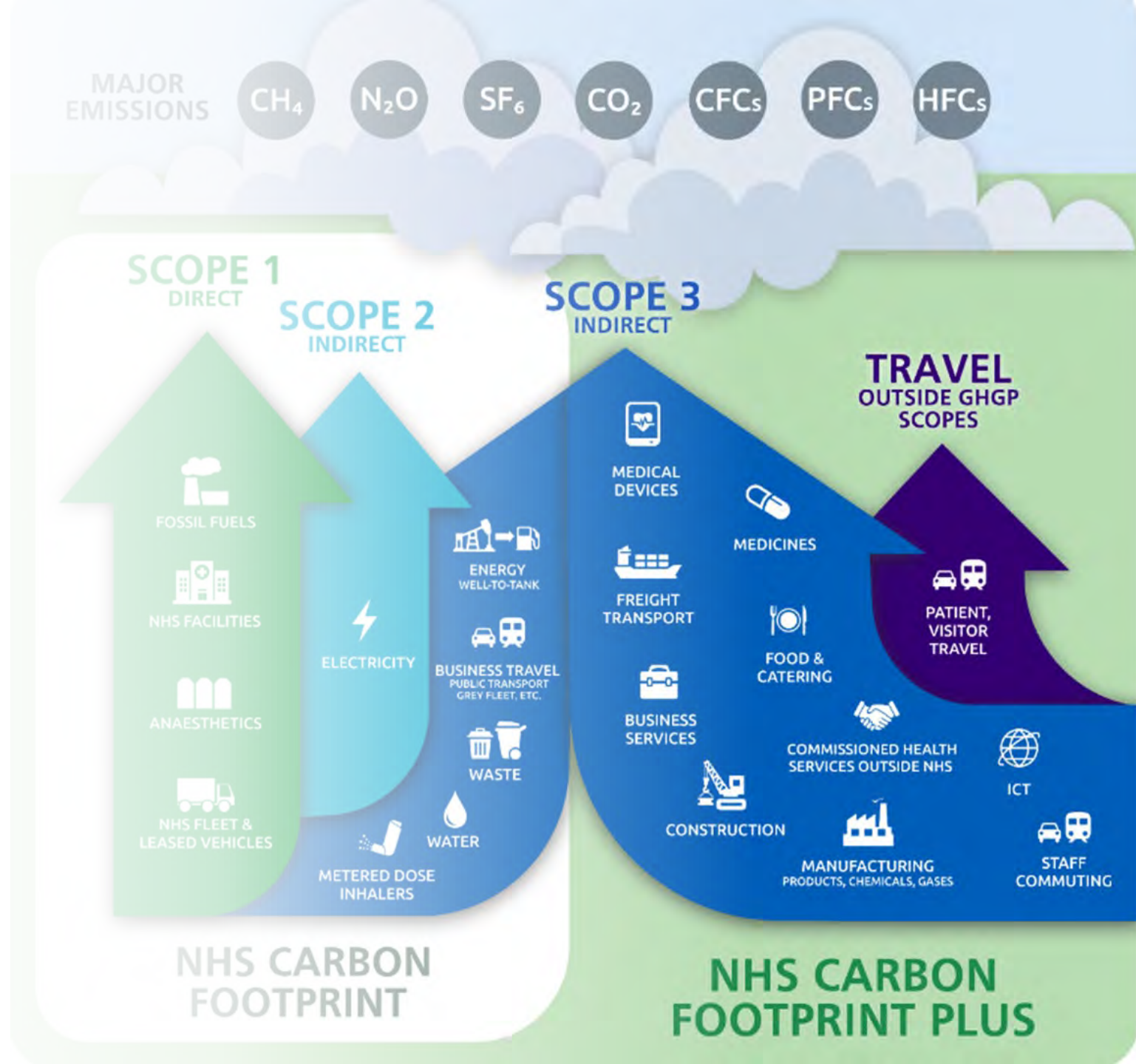
Trends in Healthcare Carbon Footprint



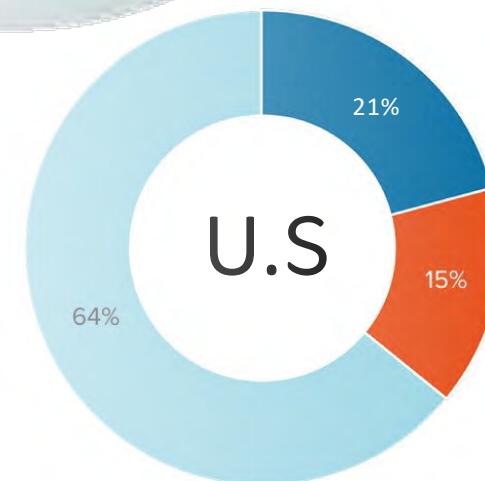
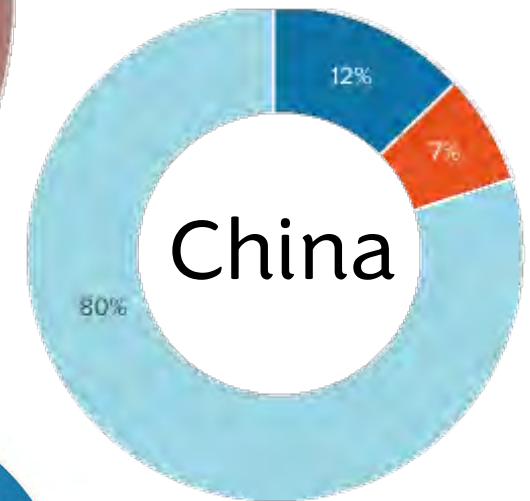
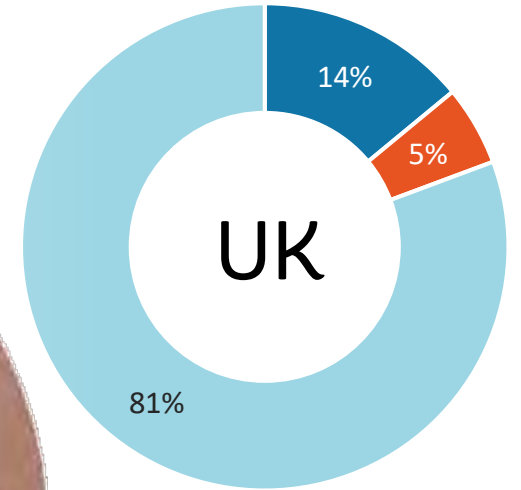
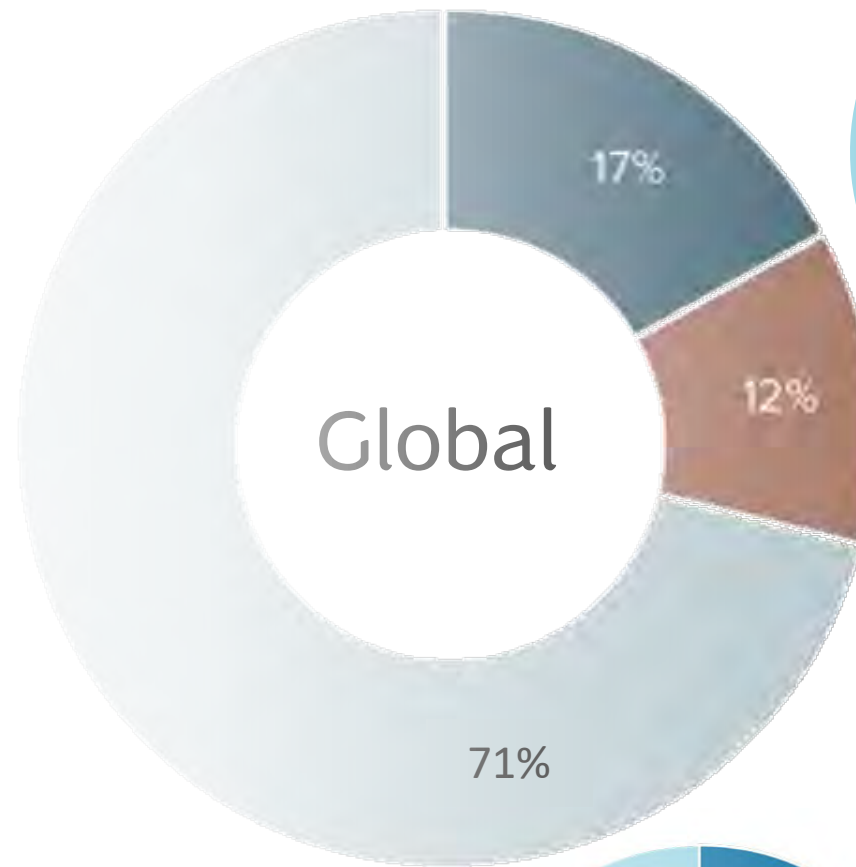
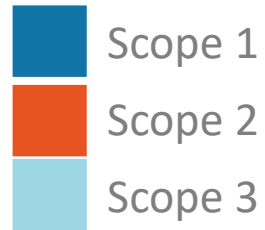
D% : Decrease percentage
I% : Increase percentage

What's NHS Carbon Footprint Plus

?



Healthcare footprint by GHGP Scopes



Healthcare Paradox :

Why It Matters ?

Saving lives but Harming the planet



Why The



The UK National Health Service



रक्षा मंत्रालय
MINISTRY OF
DEFENCE



Ministry of Defence*

2.99M



U.S. Department of Defense*

2.91M



People's Liberation Army**

2.55M

Walmart



Walmart

2.30M

amazon



Amazon

1.61M



China National
Petroleum Corporation

1.45M

NHS



National Health Service

1.38M

FOXCONN



Foxconn

1.29M

7th

World's

Biggest

Employer

According to Statista.com 2022

Biggest
Employer
in Europe

1st

World's Largest
Employer of Highly
Skilled Professionals

Health System to embed net zero into legislation

The UK National Health Service (NHS)

0 Carbon Footprint Plus Target

Set Net-Zero Target

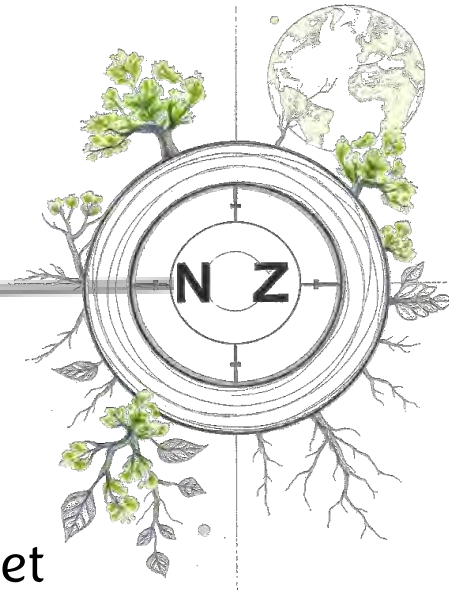
2020

2022

2040

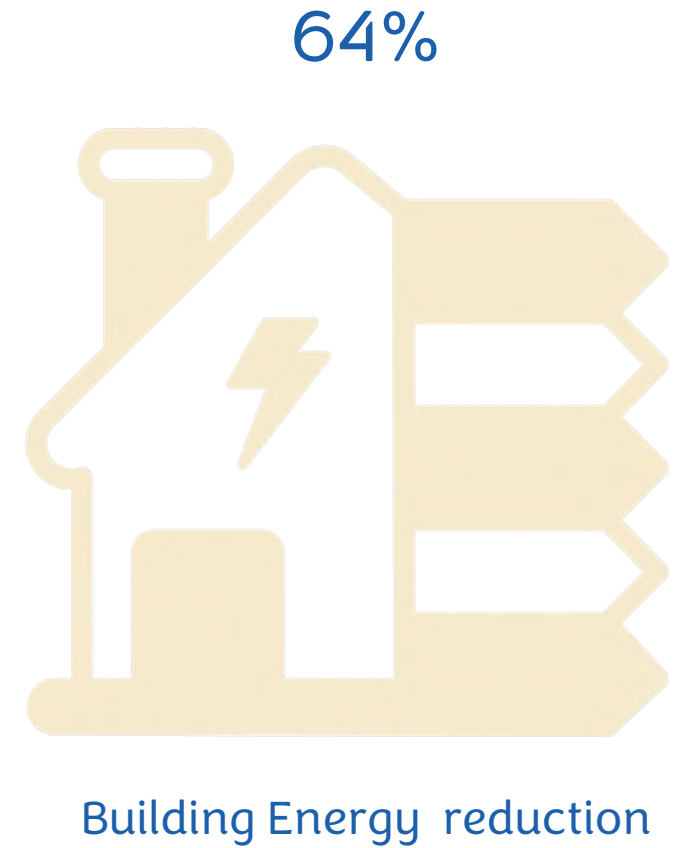
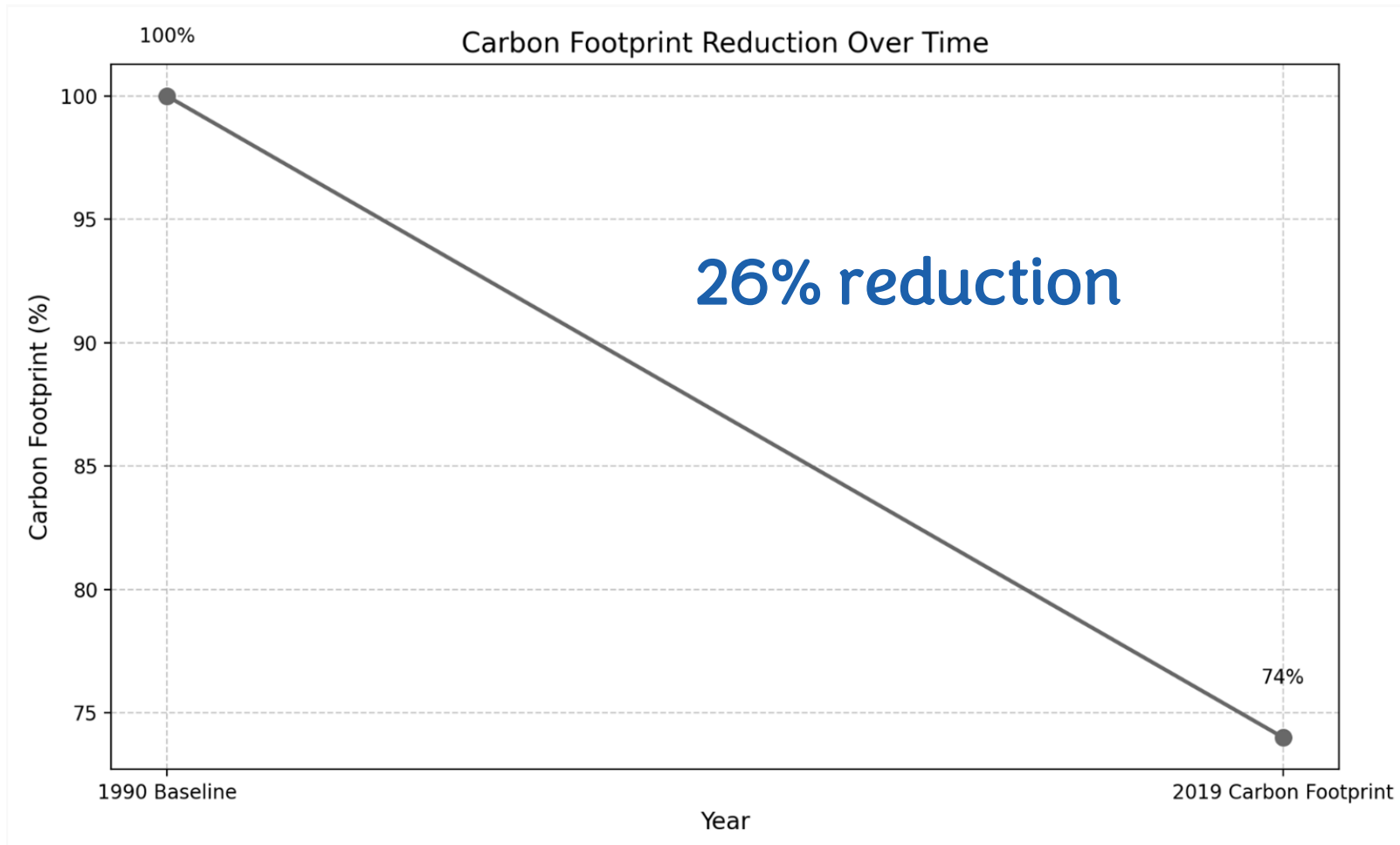
2045

0 Carbon Footprint Target



Embedded net zero into legislation, through the Health and Care Act 2022.

NHS Carbon Footprint



However,...

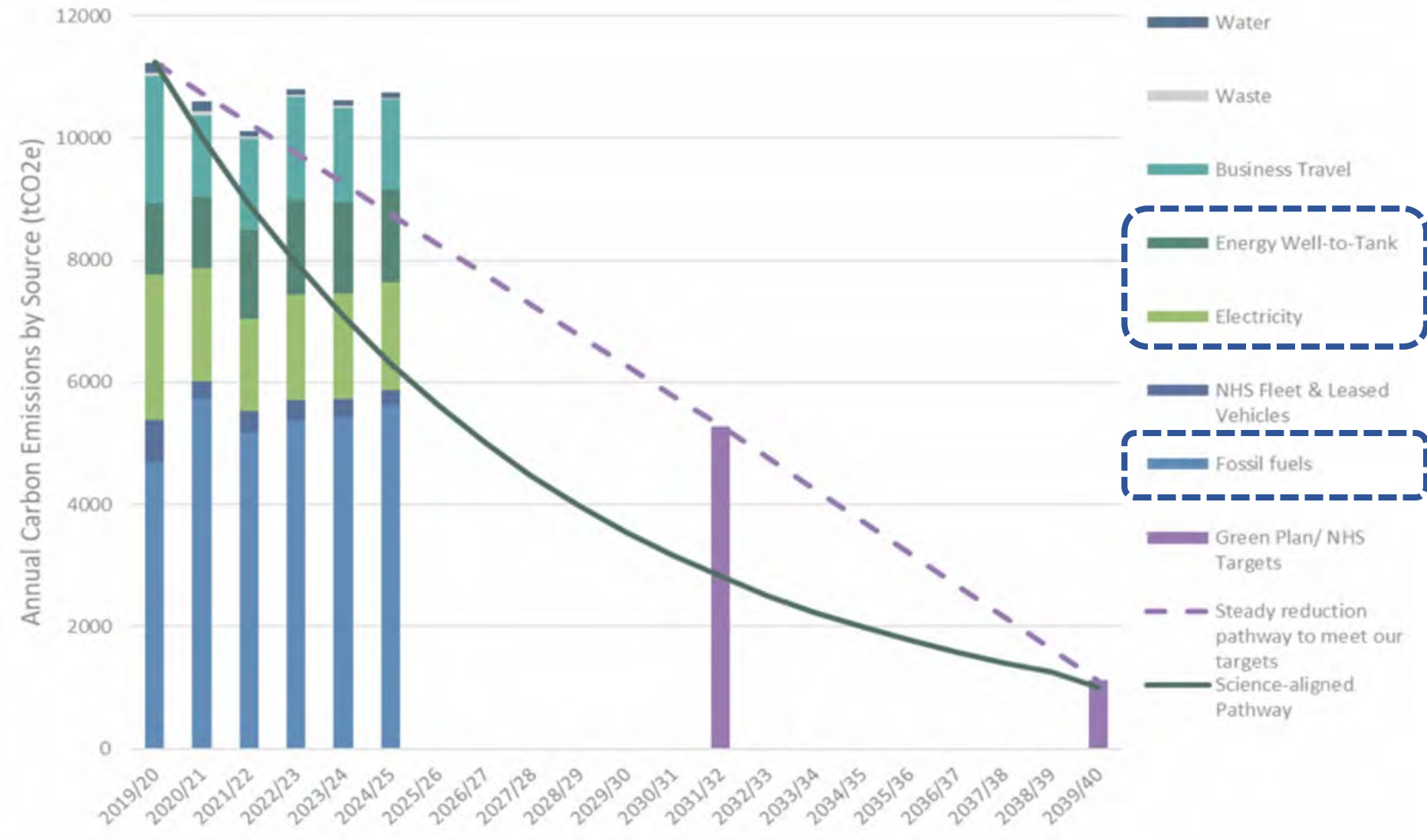
Since 2019,

Progress

remains slow

However,...

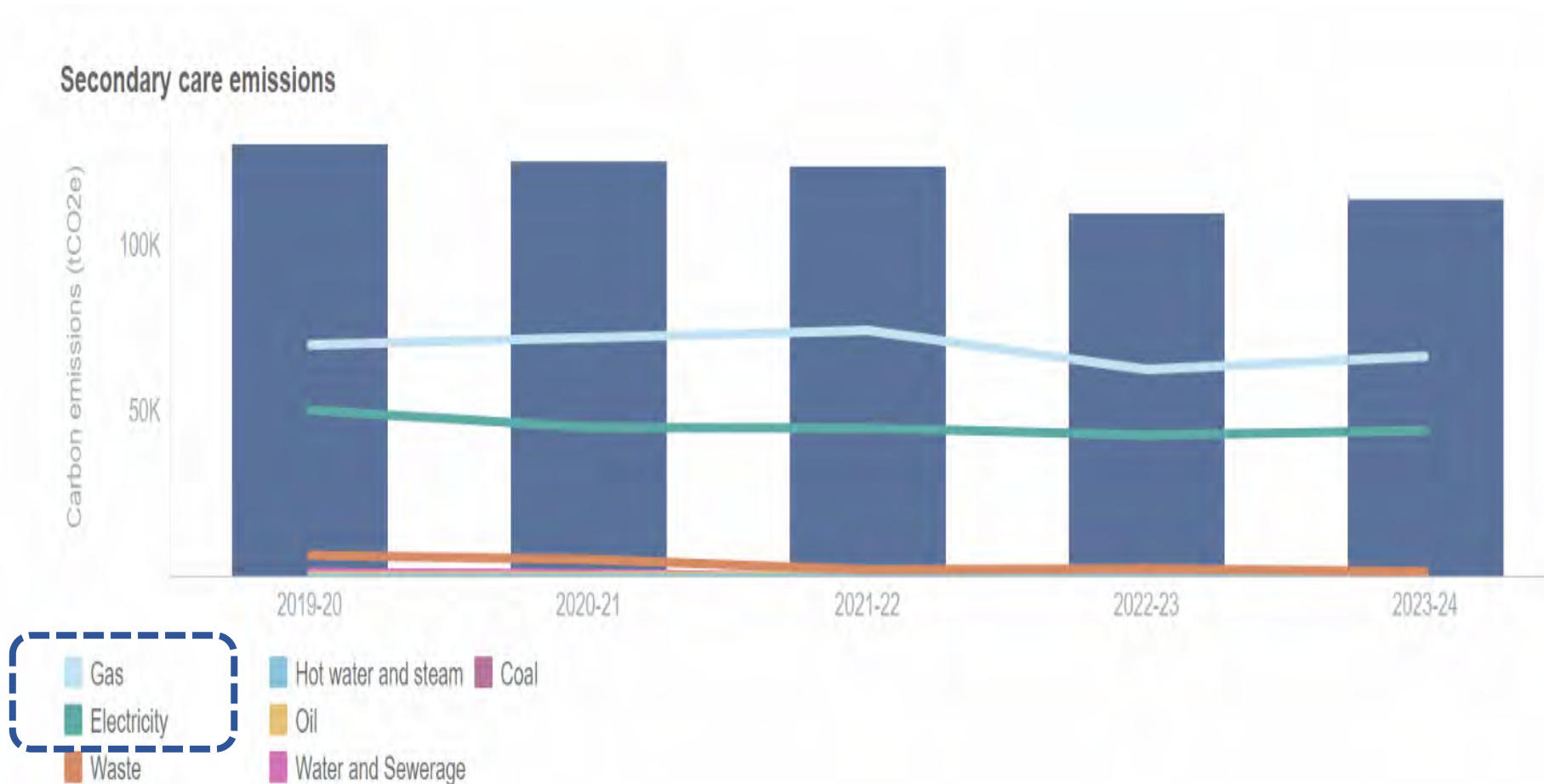
Case 1: Tees, Esk and Wear Valleys NHS Foundation Trust



Since 2019,
Progress
remains slow

However,...

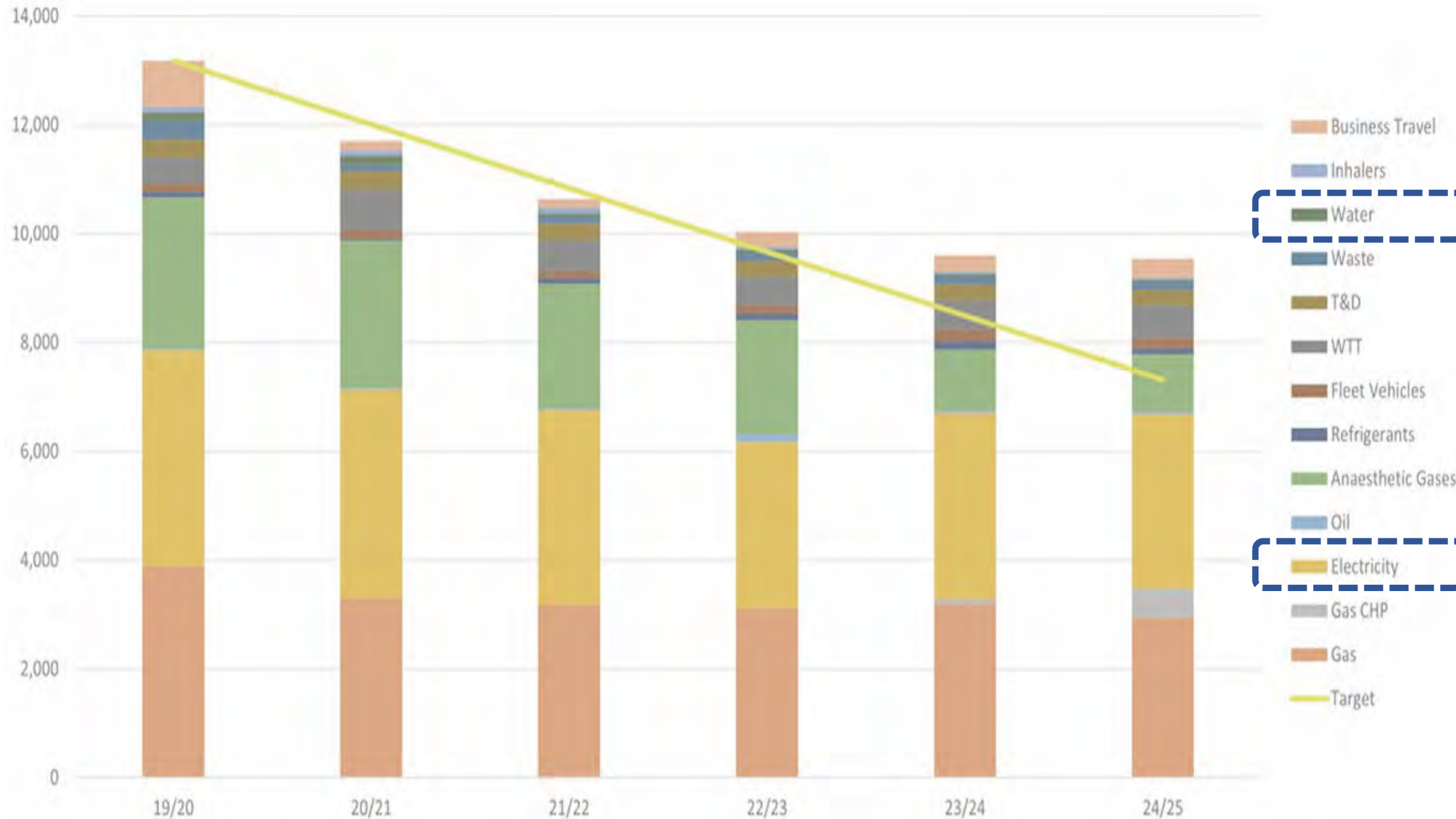
Case 2: North West London secondary care emissions



Since 2019,
Progress
remains slow

However,...

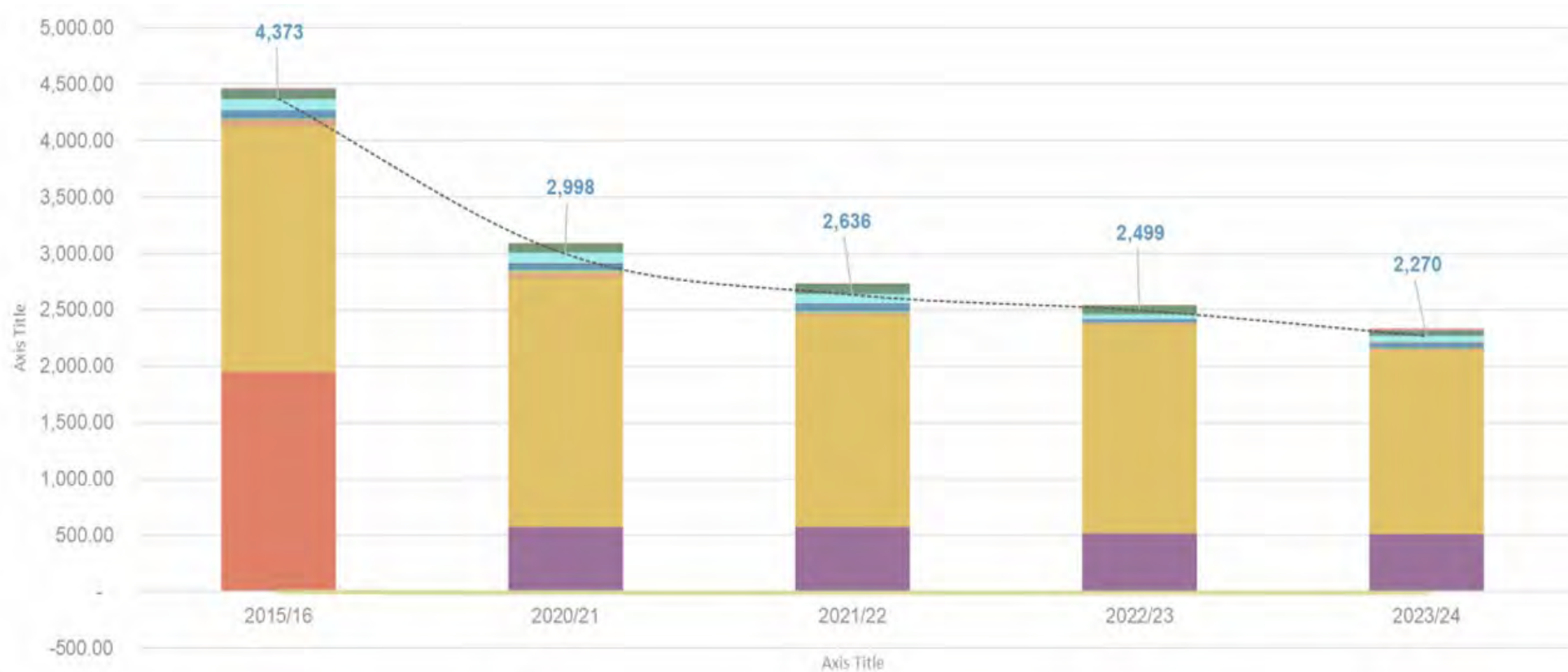
Case 3: Great Western Hospitals NHS Trust



Since 2019,
Progress
remains slow

However,...

Case 4: Sheffield Health and Social Care NHS Trust



Since 2019,
Progress
remains slow



Why

Progress is

Slow

?

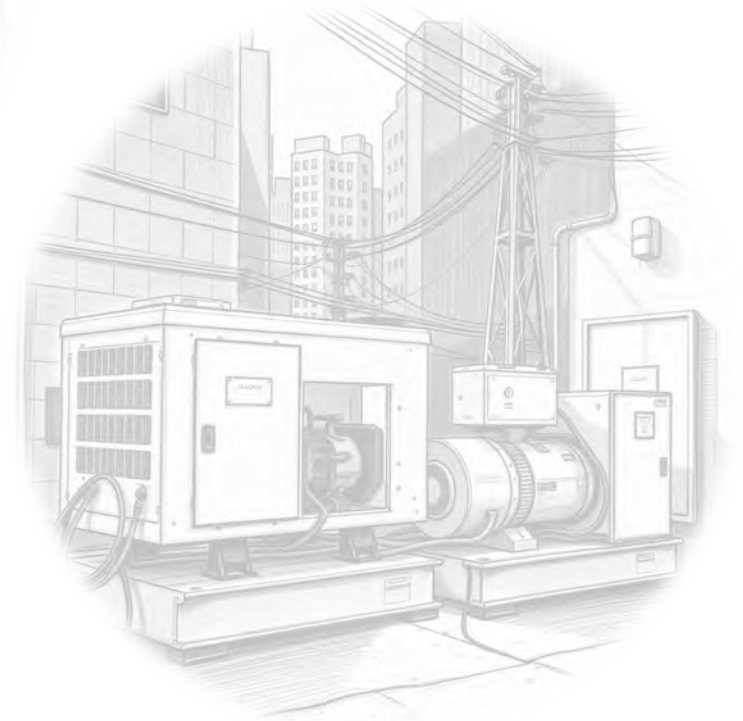
Future Hospital



24/7 operations



Backup Generators



The Energy Problem

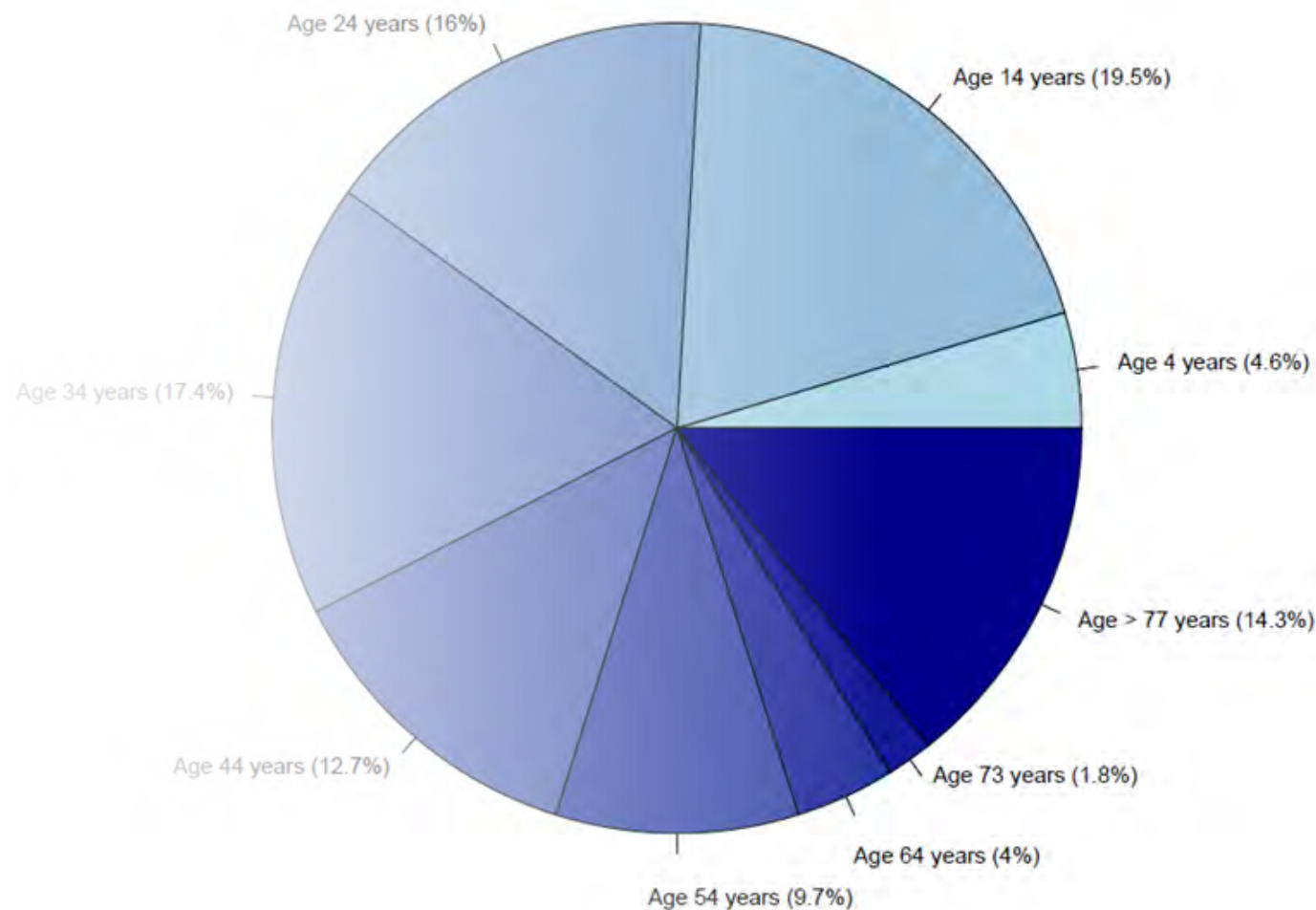


Sterilisation Requirements

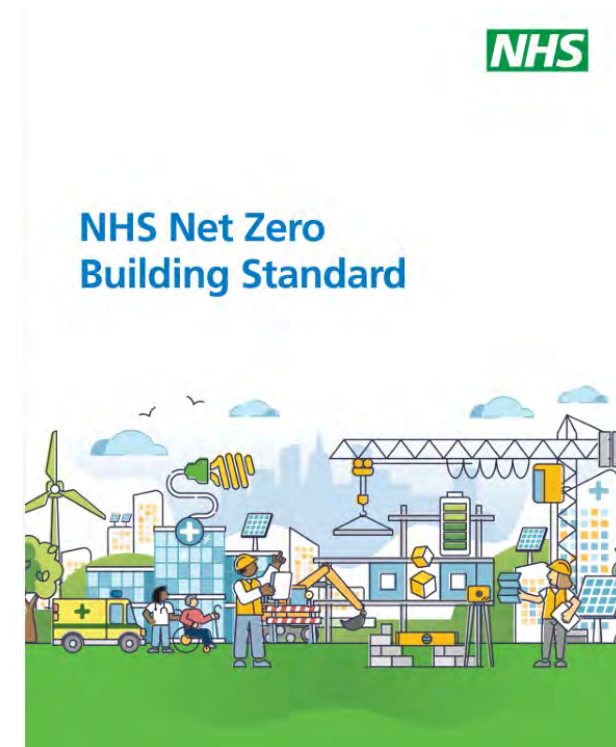
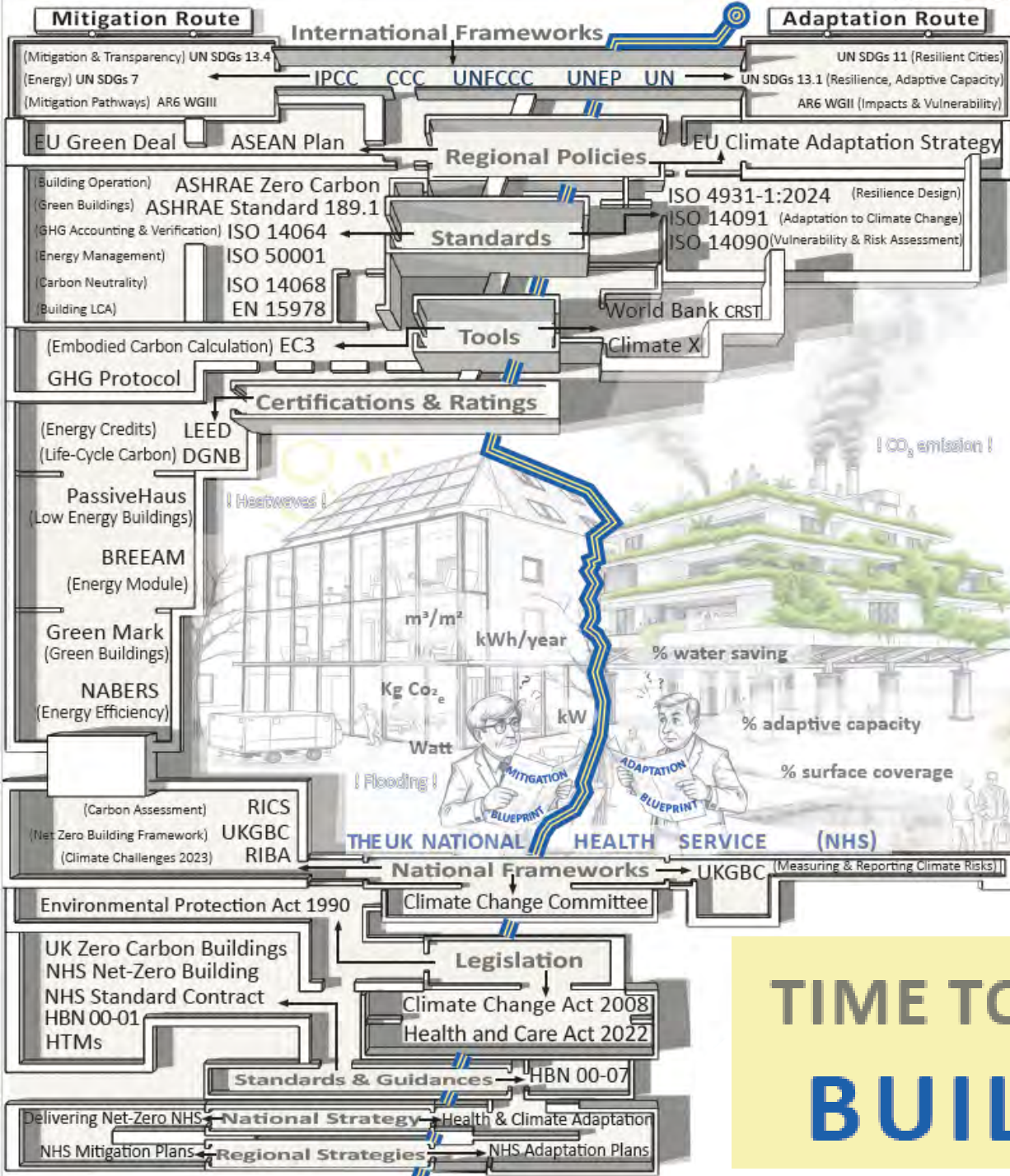
214 Trusts, England

The Huge Building Stock

13,135
Healthcare
Buildings

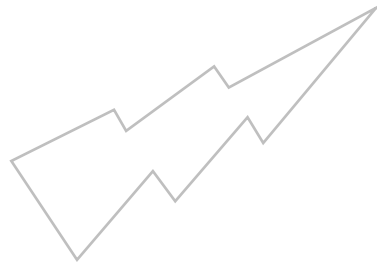


The Policy Gap



TIME TO **ESCAPE** THE HEALTHCARE
BUILDING POLICY MAZE

The Stringent
Timeline

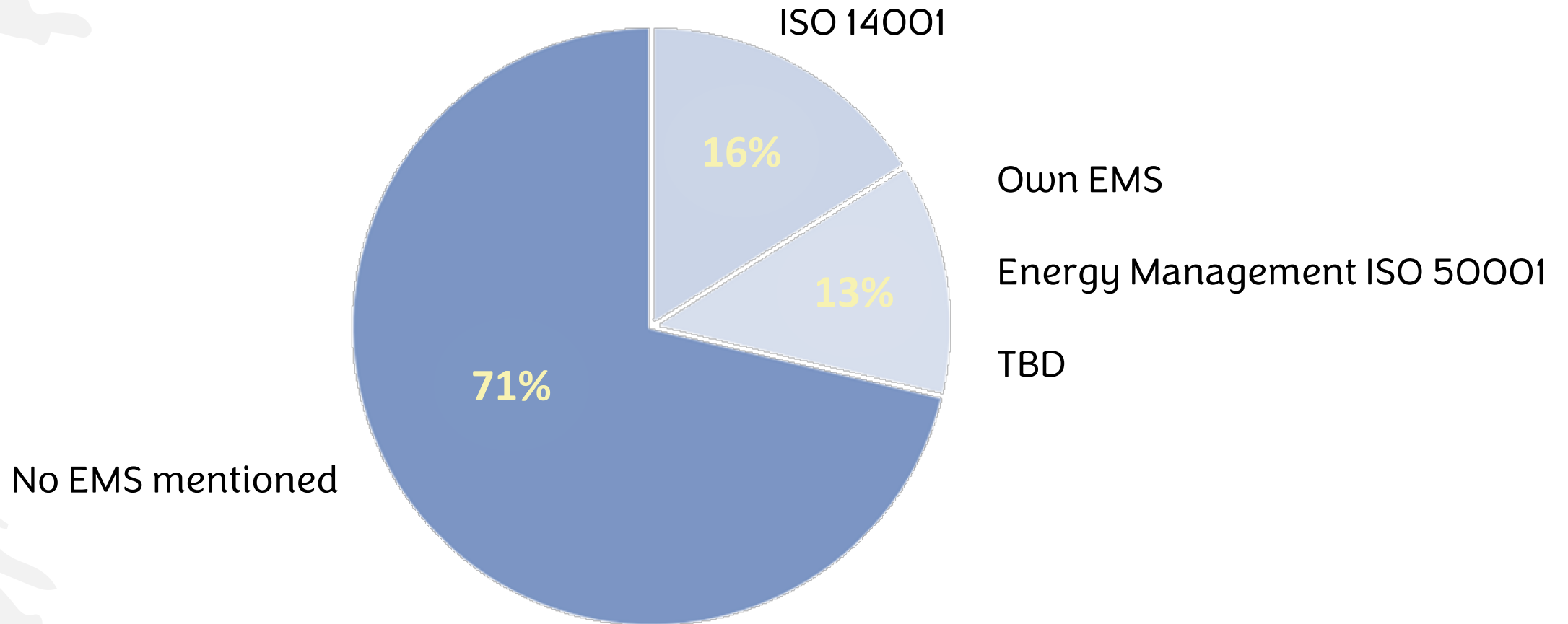


Lack of Data

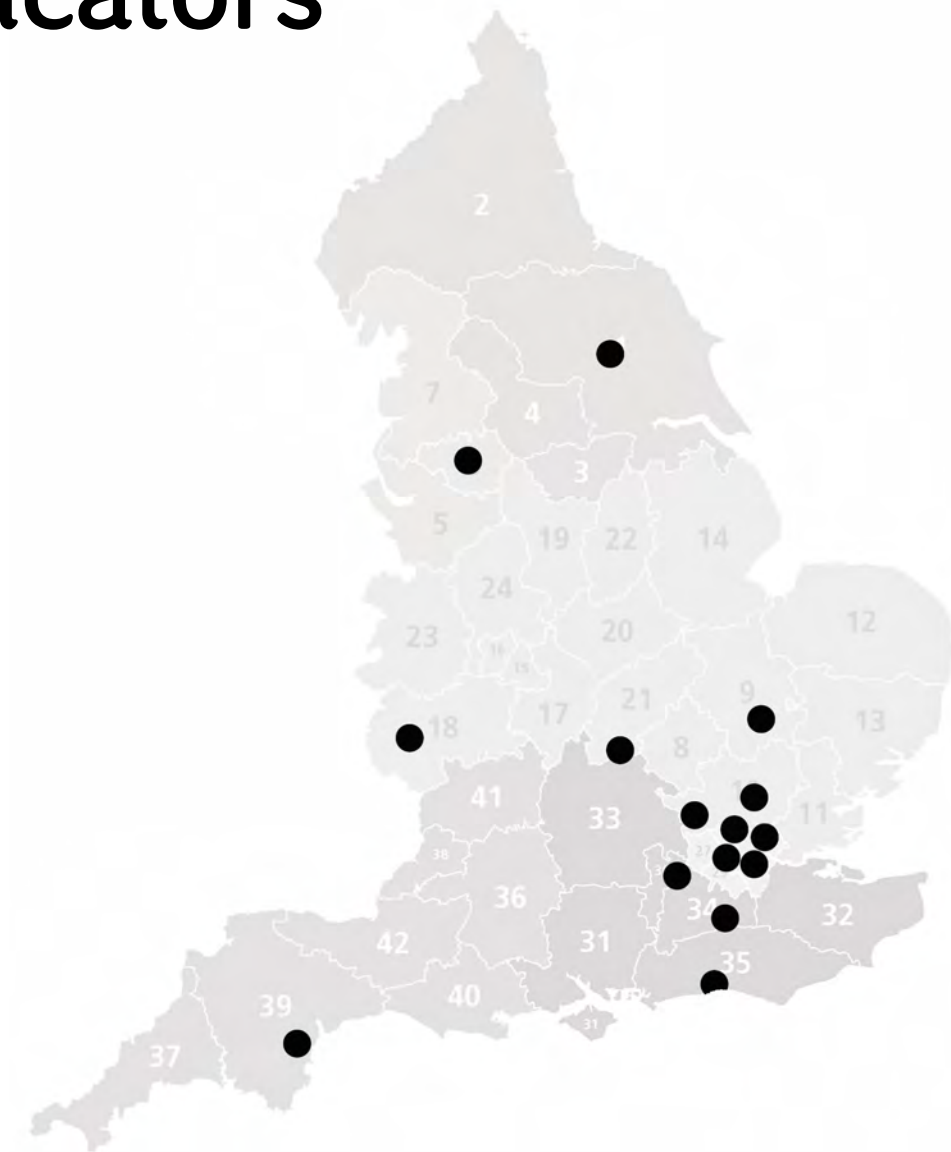
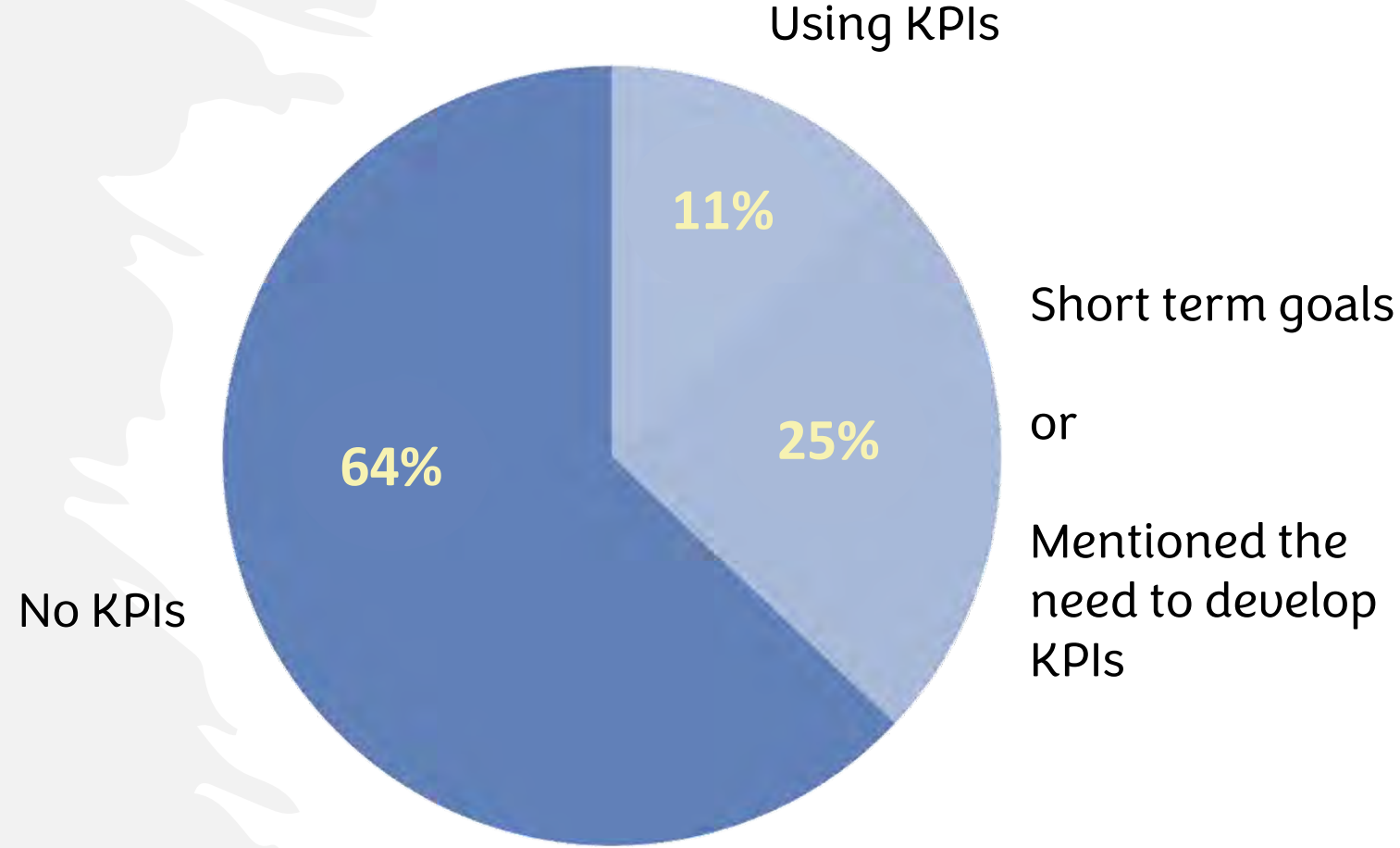
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Different Stages, Different Strategies

Environmental Management System



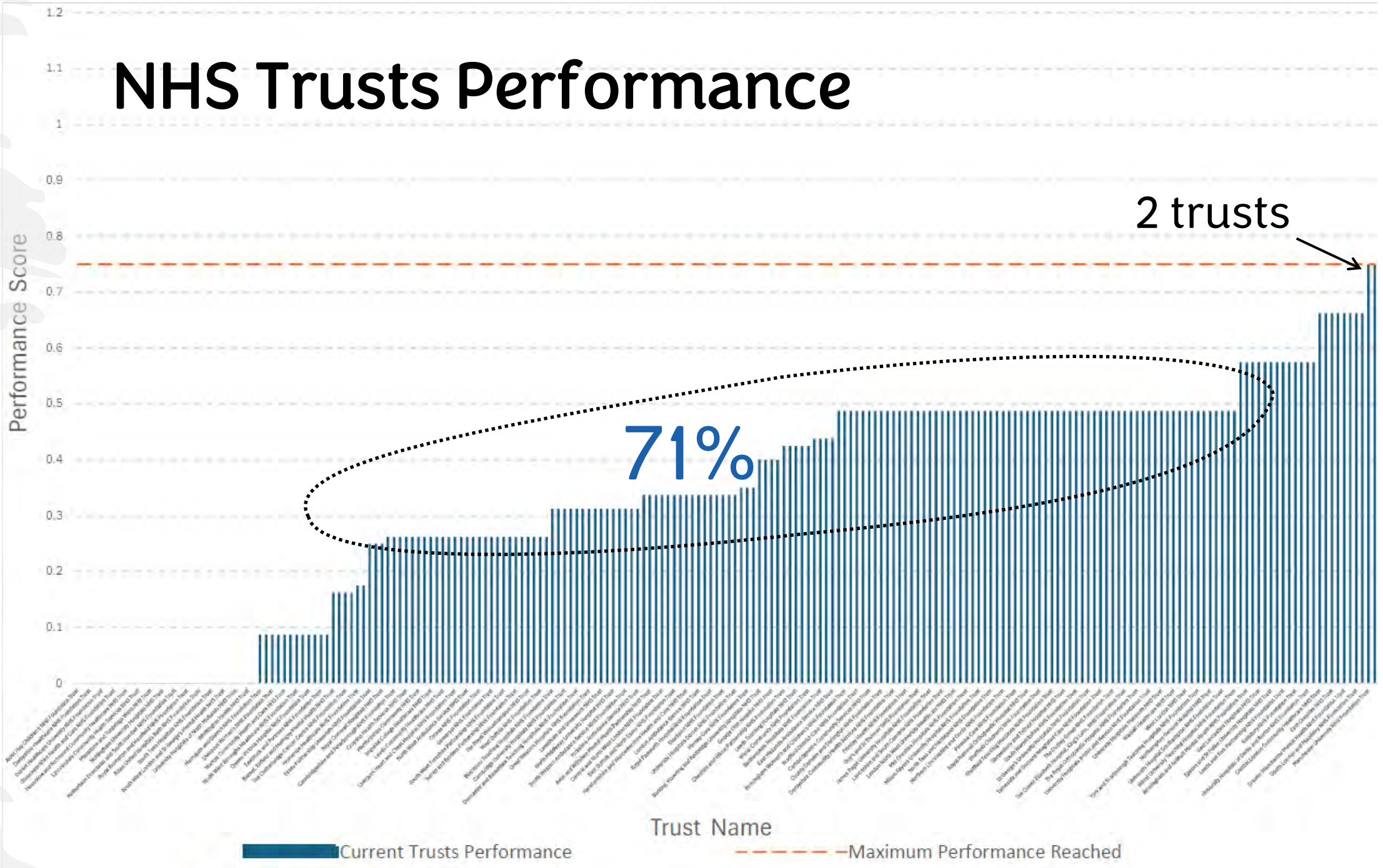
Key Performance Indicators

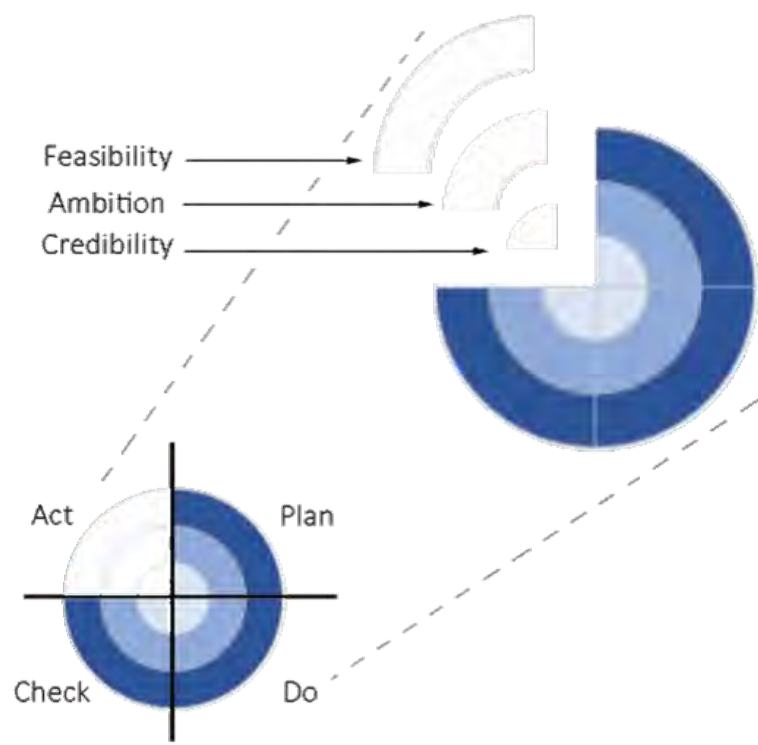


Performance Evaluation Matrix



NHS Trusts Performance





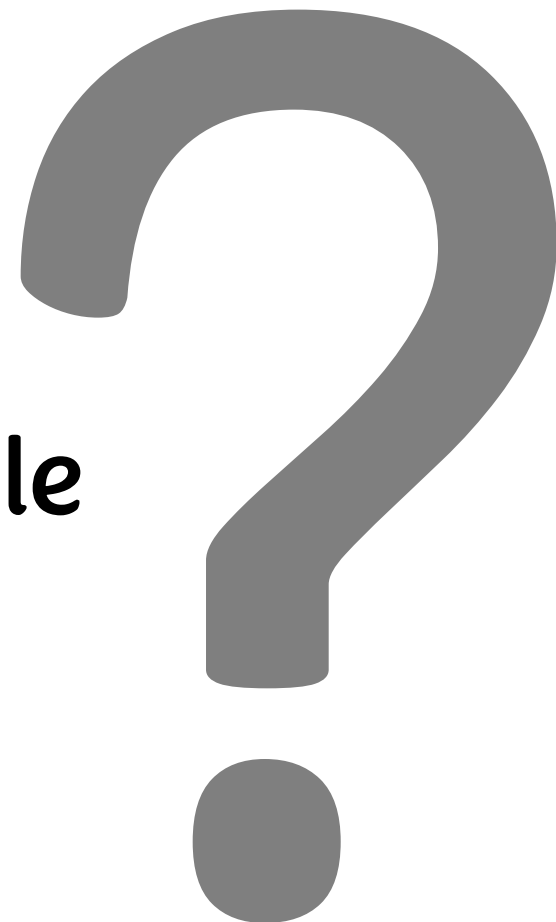
**Can the NHS
meet its 2040
net-zero target?**



How Can **Global Healthcare Settings**

reach **Net-Zero**

Amid Industry Leader Struggle







Building and Environment

Volume 278, 15 June 2025, 112966



Net zero in healthcare buildings: Lessons from assessing the strategies of 214 NHS trusts in England

Asma Amamou ^a  , Stephen Blenkinsop ^a, Clare Winter ^b, Oliver Heidrich ^a

<https://doi.org/10.1016/j.buildenv.2025.112966>

Thank You

Part of PhD Research

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- Northumbria NHS Trust Supervisors:
Dr Clare Winter, Jill Harland
& Dr Elaine Winkley

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