Measuring the carbon footprint of the NHS

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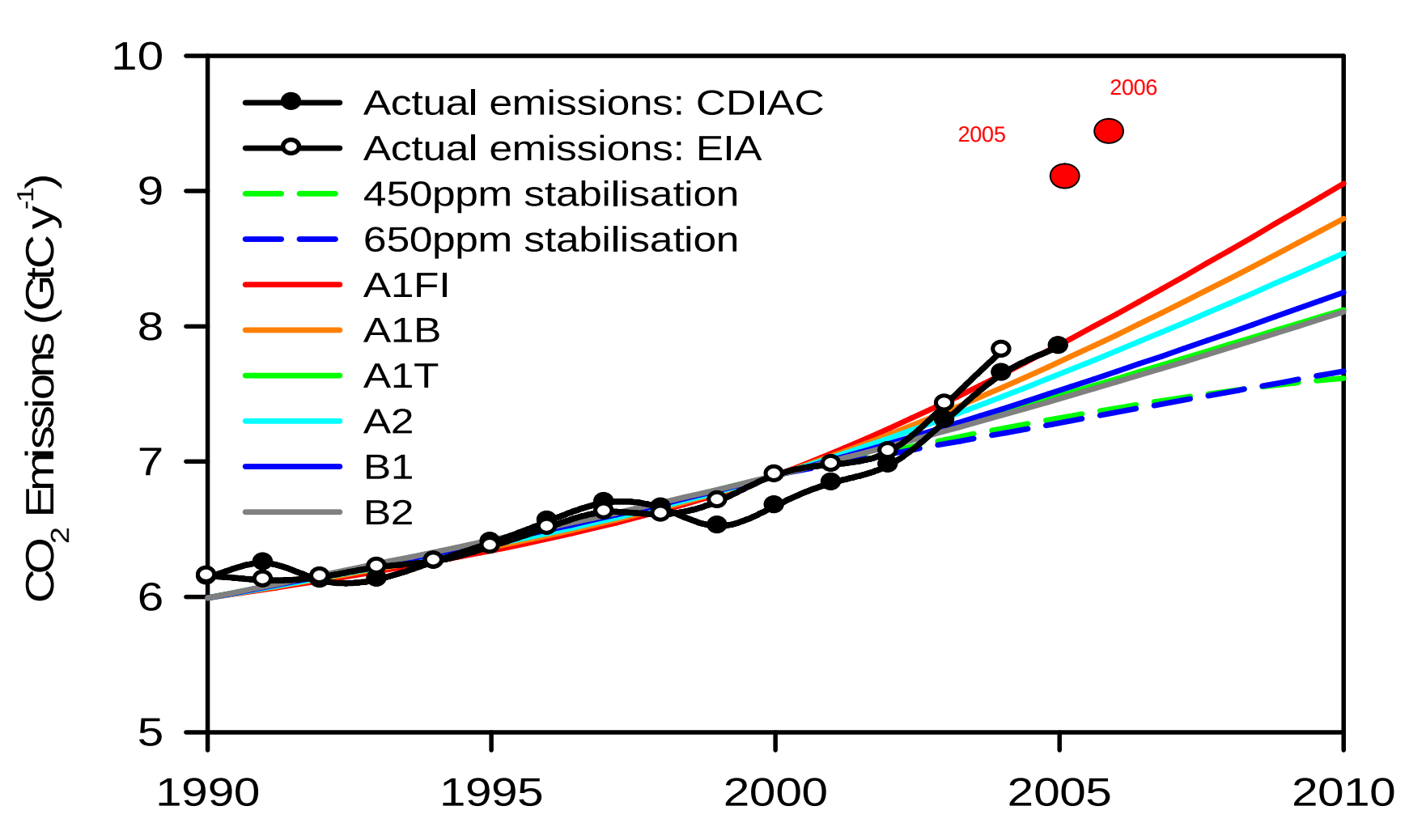
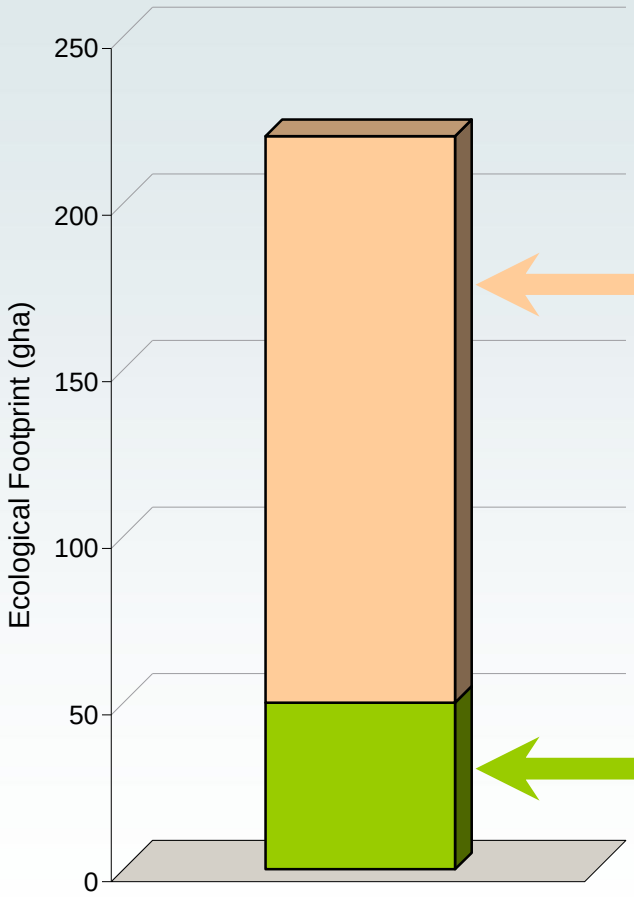
Climate Change: Emissions above all IPCC predictions



Trajectory of global Fossil Fuel Emissions (Global Carbon Project, 2007)

What is a Carbon Footprint?



Indirect, external, off-site, upstream, embodied impacts

Direct, internal, on-site impacts

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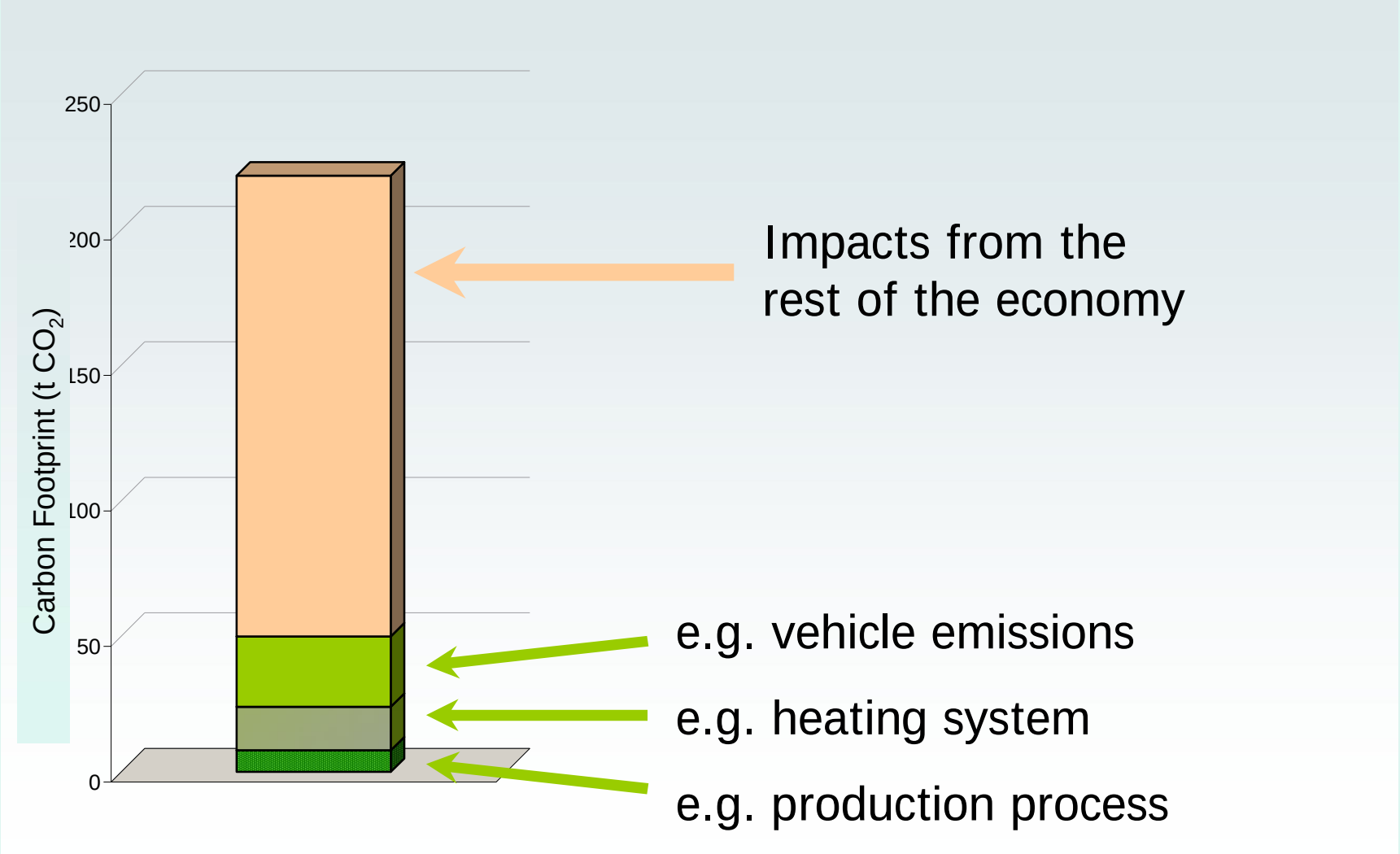

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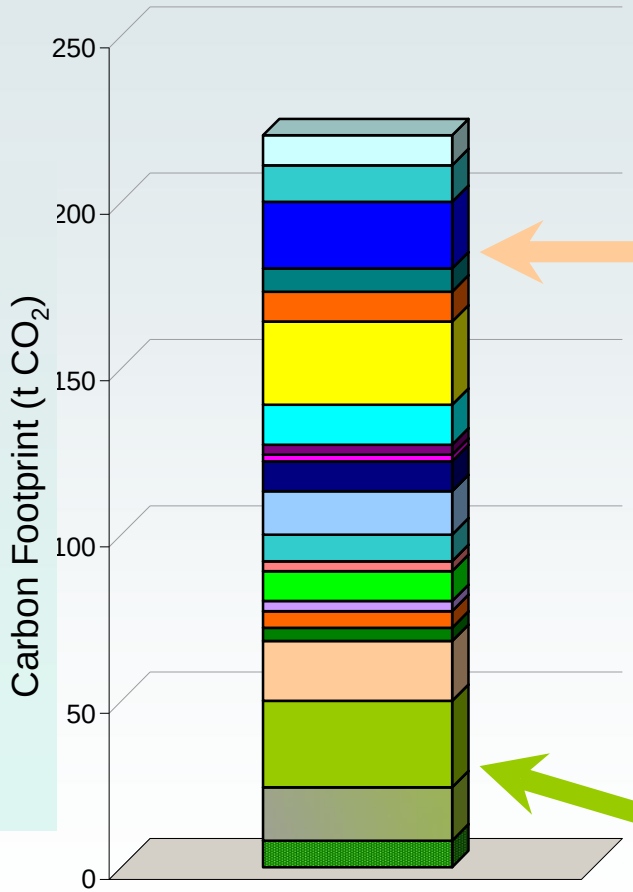


We have **some control** over the impacts from our suppliers – e.g. through purchasing or investing.

We have **direct control** over the way we run our own organisation – e.g. heating of premises or business travel.

NHS Carbon footprint project background

- Launched by UK Sustainable Development Commission and NHS England SD Unit
- Analysis led by Stockholm Environment Institute (SEI).
- Runs parallel to NHS England Carbon Reduction Strategy
- Overall goals:
    - To provide a firm statistical base for the carbon reduction strategy
    - To provide analytical tools at both trust and policy levels to enable effective carbon management

NHS Carbon footprint project phases

Phase 1a

- Baseline of 2004
- Transport
- Energy
- Procurement

Phase 1b

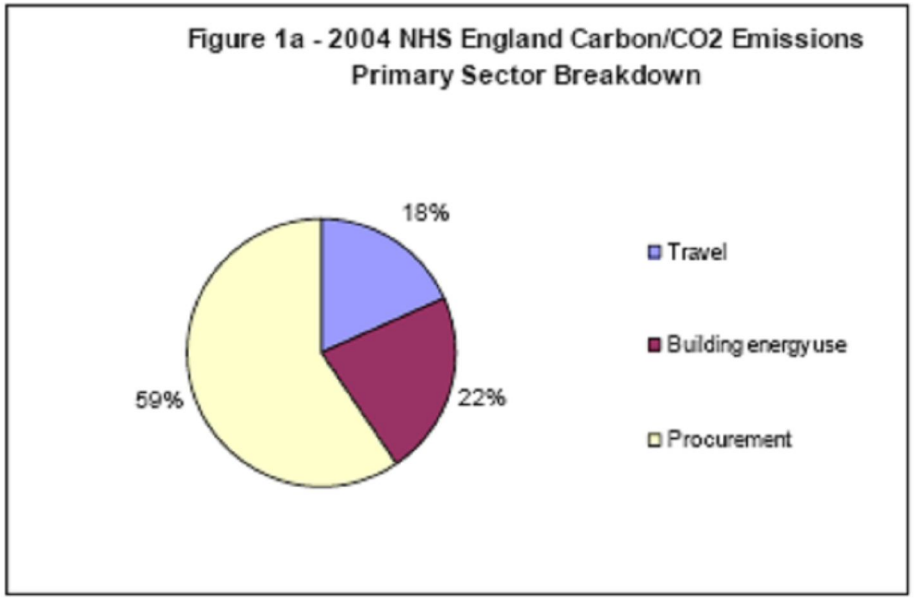
- Time series analysis from 1992 to 2004
- Supply Chain Analysis of Key Sectors
- Further Data Verification

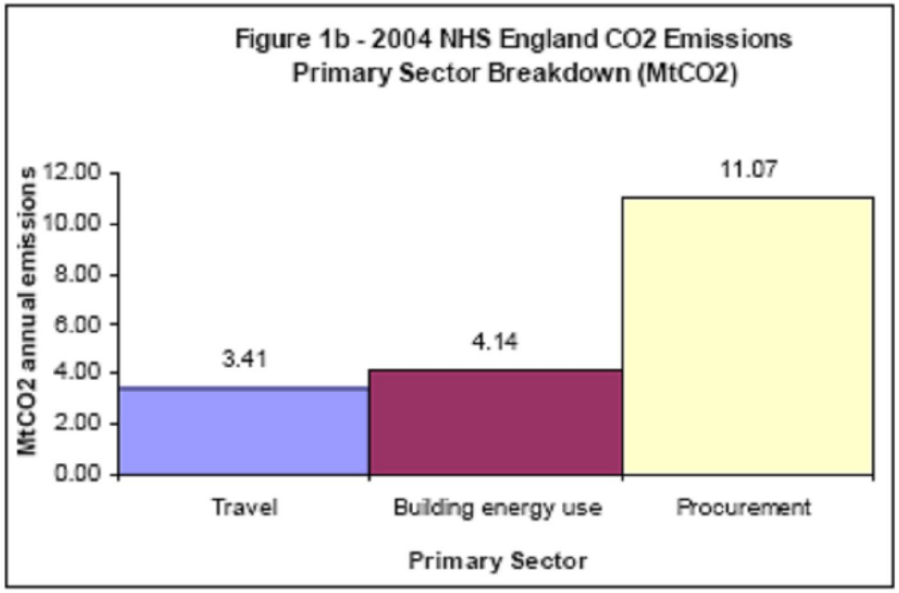
Consumption emissions methodology

Three primary sectors comprise the overall footprint:

- **Procurement**: Goods and services purchased by NHS England (excluding energy and travel). Emissions calculated from top-down Input-Output analytical methodology
- **Building energy**: Heating, hot water, electricity consumption and cooling. Emissions calculated from bottom-up Estates Return Information Collection (ERIC) data
- **Travel**: Movement of people (i.e. patients, visitors and staff) Emissions calculated from National Travel Survey (NTS) data

Carbon Footprint of the NHS





NHS - Travel

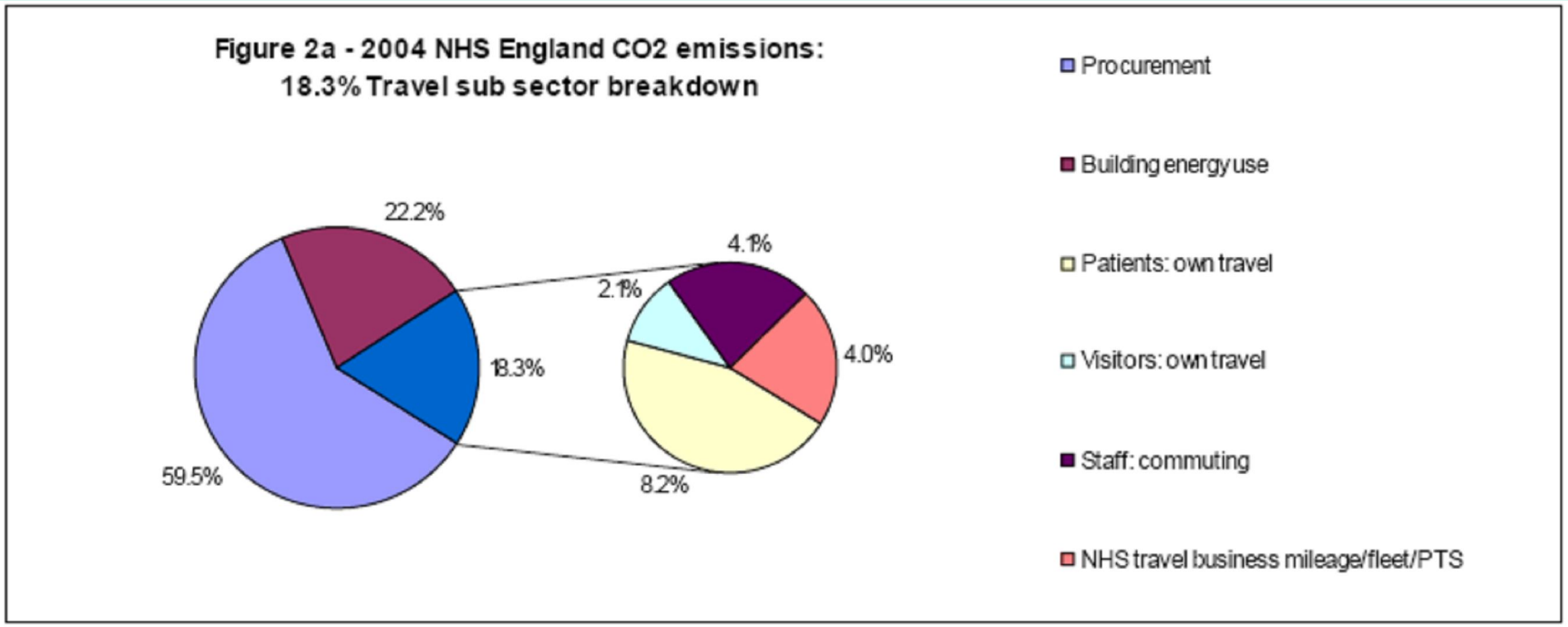
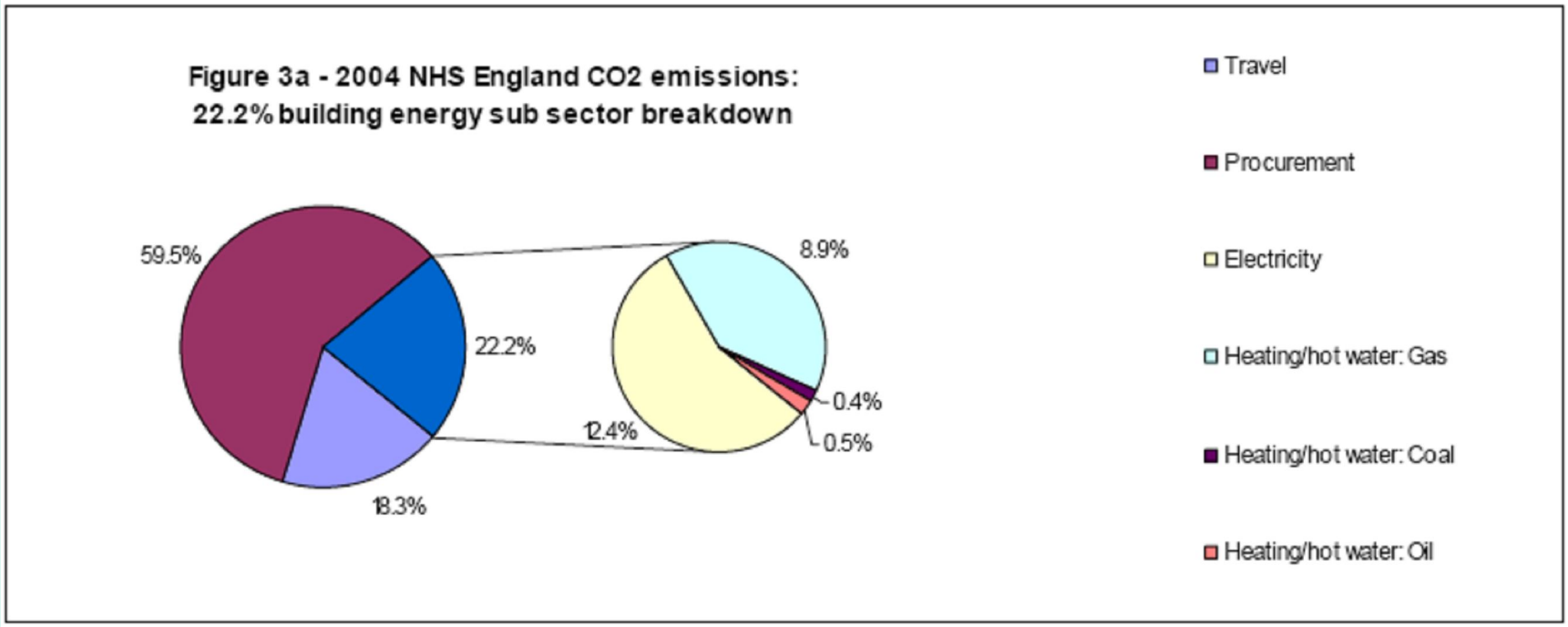
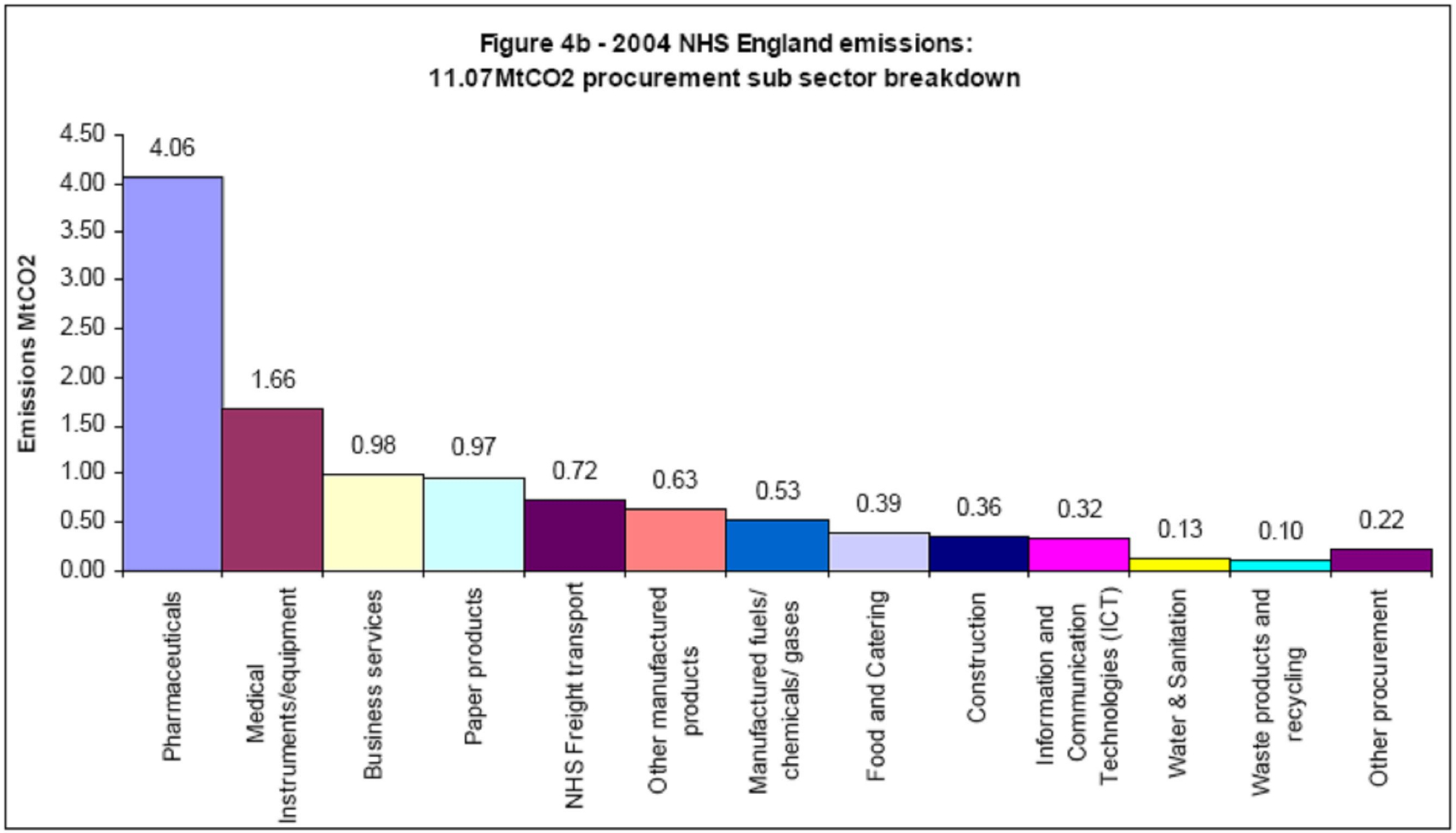


Figure 2a - 2004 NHS England CO2 emissions:
18.3% Travel sub sector breakdown
22.2%
18.3%
59.5%
4.1%
2.1%
4.0%
8.2%
Procurement
Building energy use
Patients: own travel
Visitors: own travel
Staff: commuting
NHS travel business mileage/fleet/PTS

NHS - Buildings

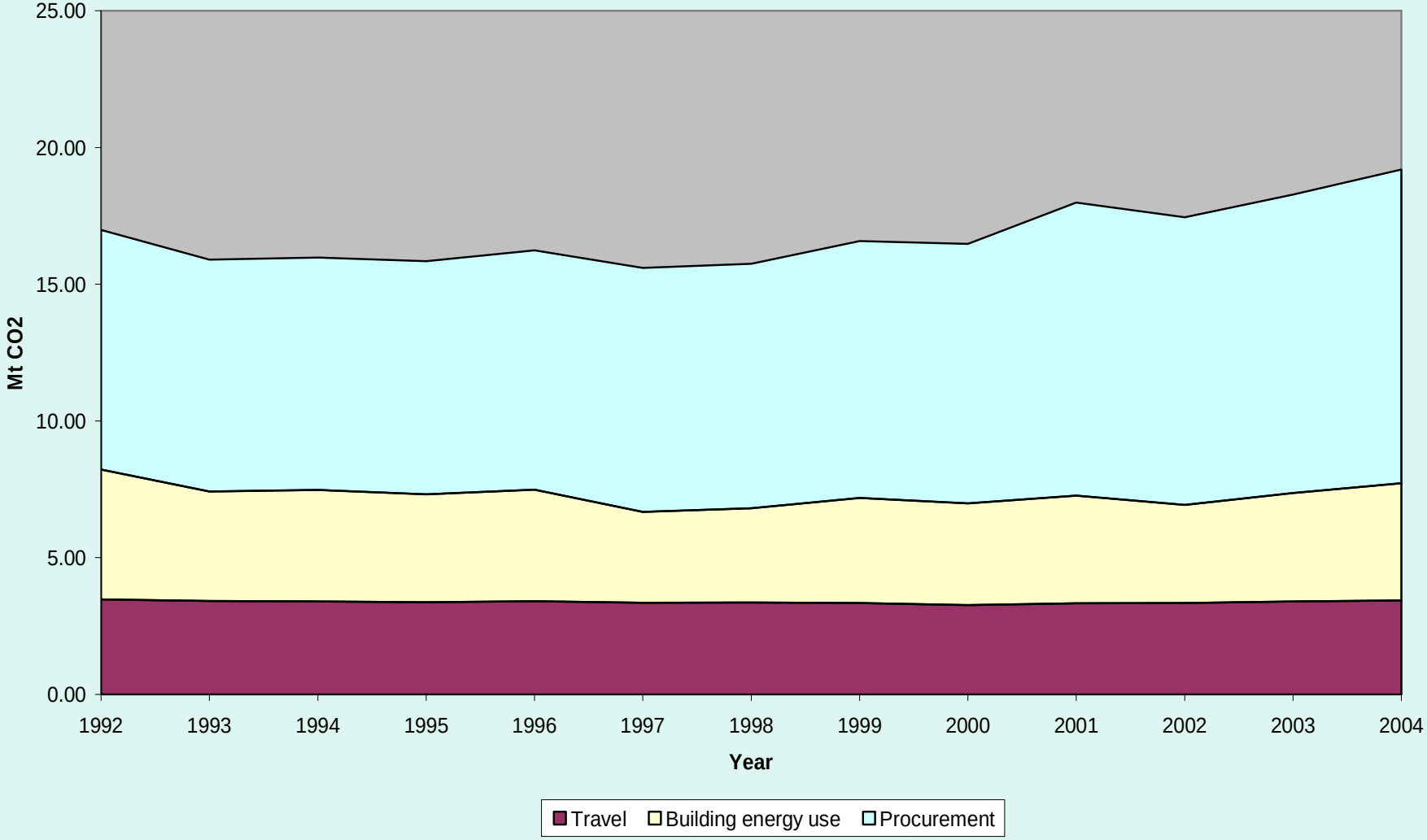


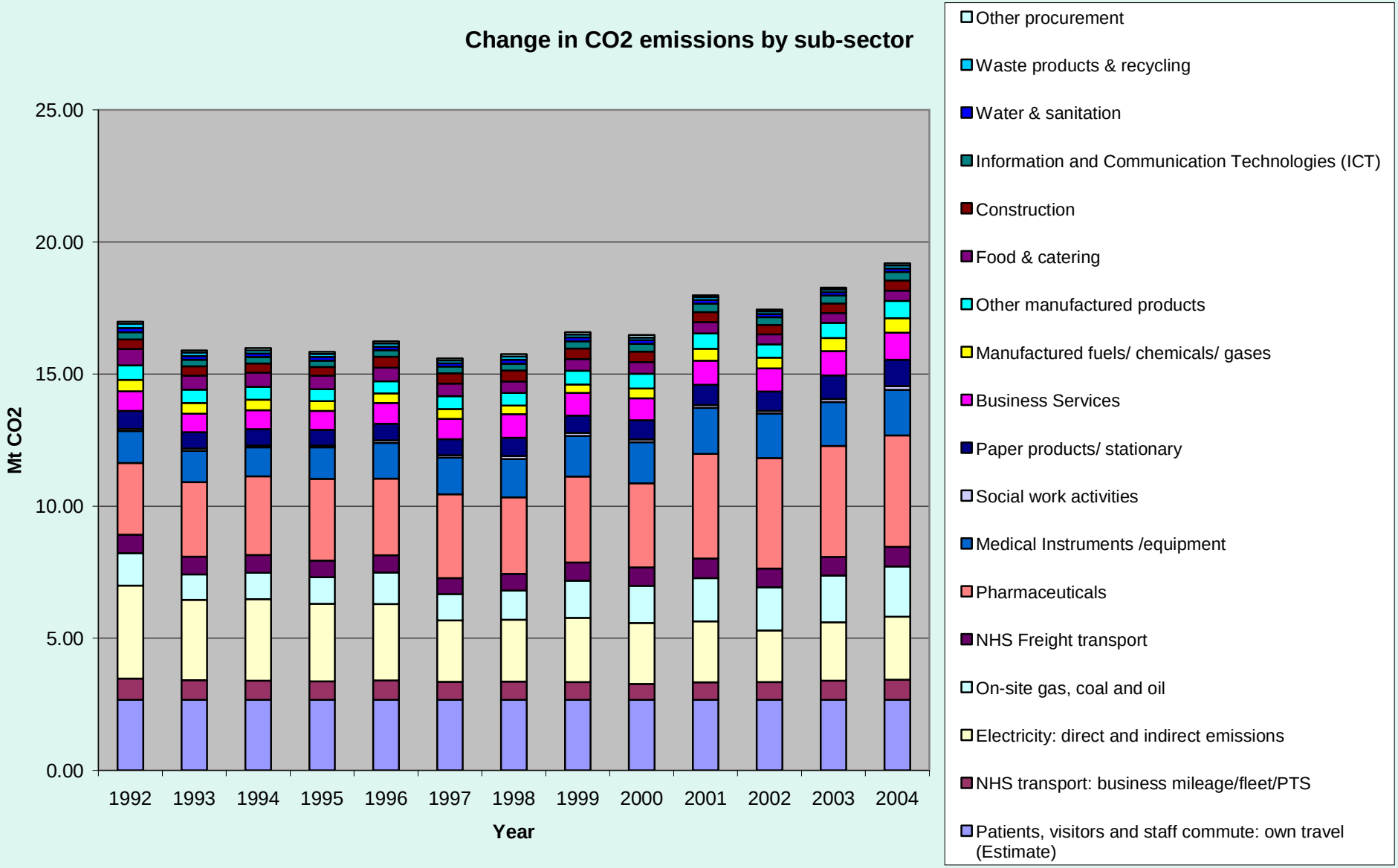
NHS - Procurement

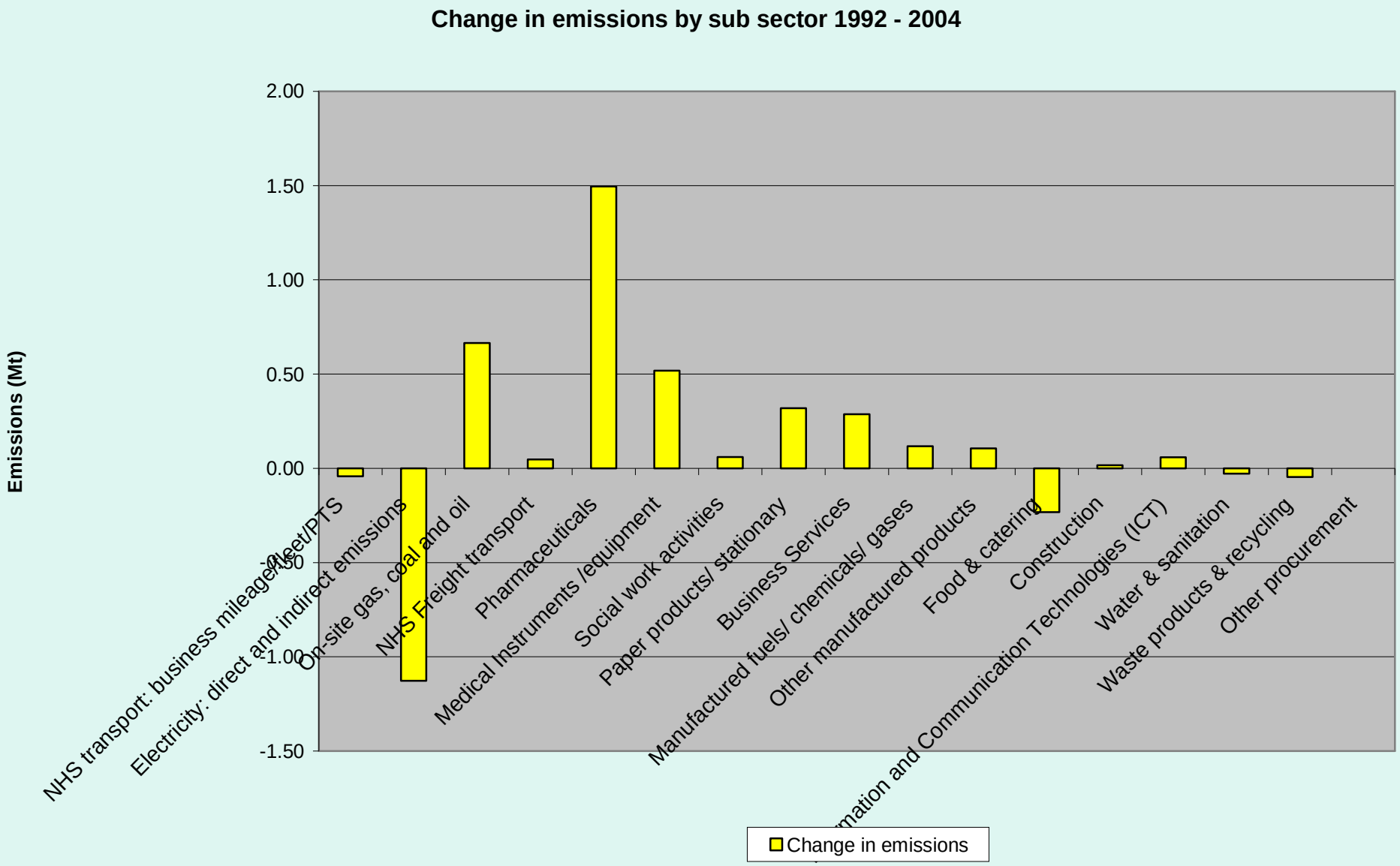


Phase 1b – Time Series

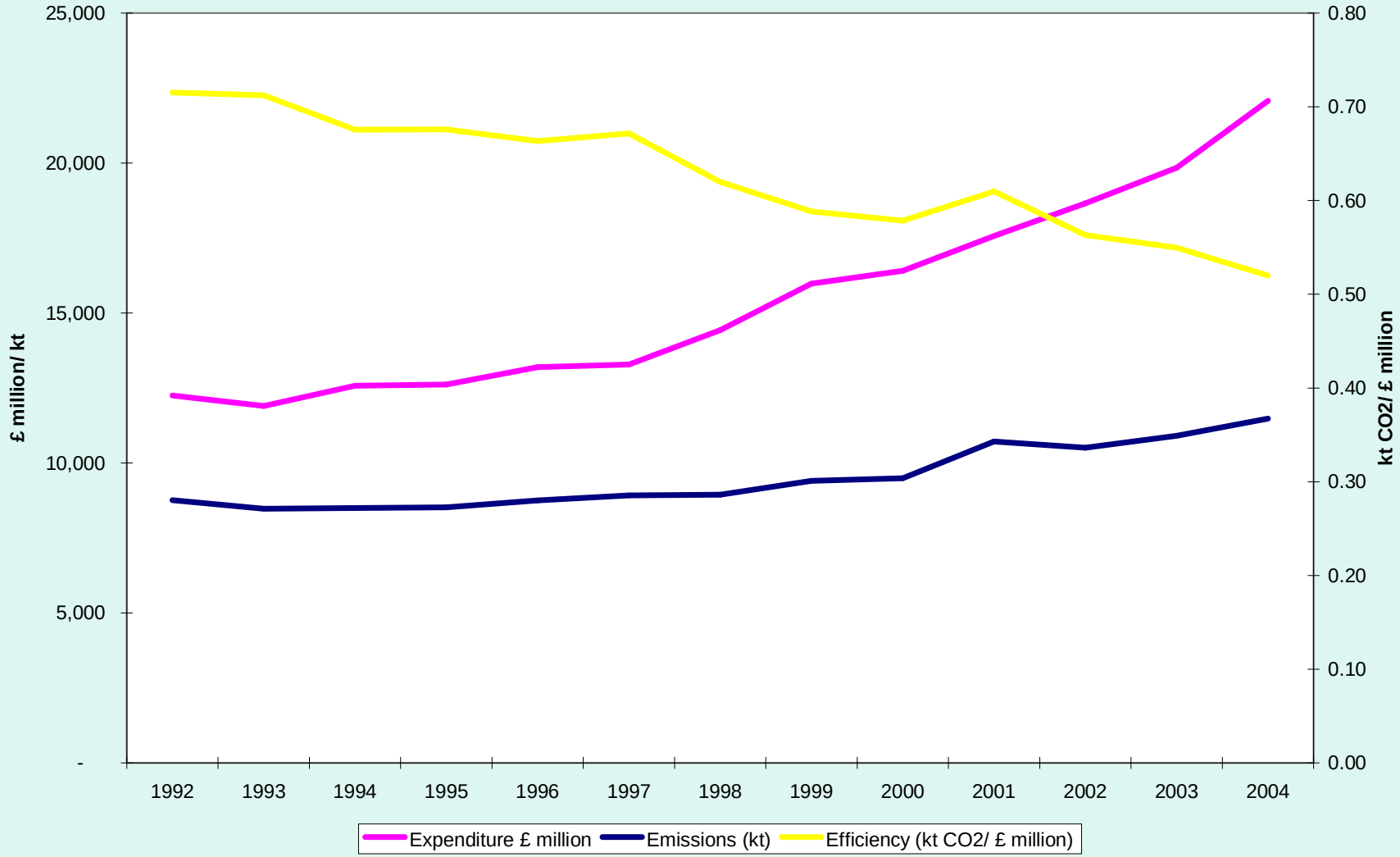
Total emissions over time for the three main sectors of travel, energy and procurement



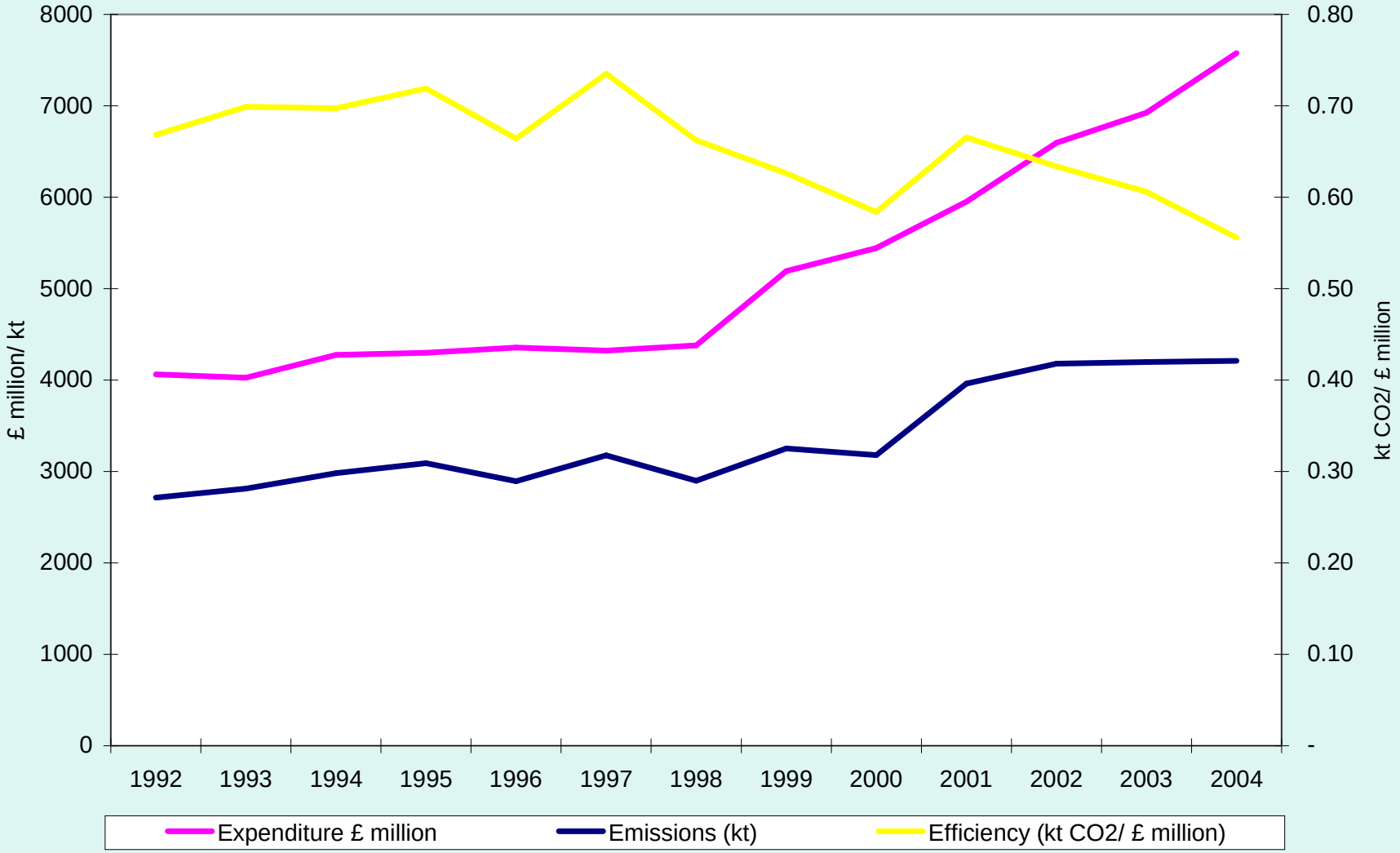

Change in CO2 emissions by sub-sector
25.00
20.00
15.00
10.00
5.00
0.00
Mt CO2
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
Year
Other procurement
Waste products & recycling
Water & sanitation
Information and Communication Technologies (ICT)
Construction
Food & catering
Other manufactured products
Manufactured fuels/ chemicals/ gases
Business Services
Paper products/ stationary
Social work activities
Medical Instruments /equipment
Pharmaceuticals
NHS Freight transport
On-site gas, coal and oil
Electricity: direct and indirect emissions
NHS transport: business mileage/fleet/PTS
Patients, visitors and staff commute: own travel (Estimate)


Change in emissions by sub sector 1992 - 2004
Emissions (Mt)
2.00
1.50
1.00
0.50
0.00
-0.50
-1.00
-1.50
NHS transport: business mileage/fleet/PTS
Electricity: direct and indirect emissions
On-site gas, coal and oil
NHS Freight transport
Pharmaceuticals
Medical Instruments /equipment
Social work activities
Paper products/ stationary
Business Services
Manufactured fuels/ chemicals/ gases
Other manufactured products
Food & catering
Construction
Information and Communication Technologies (ICT)
Water & sanitation
Waste products & recycling
Other procurement
Change in emissions

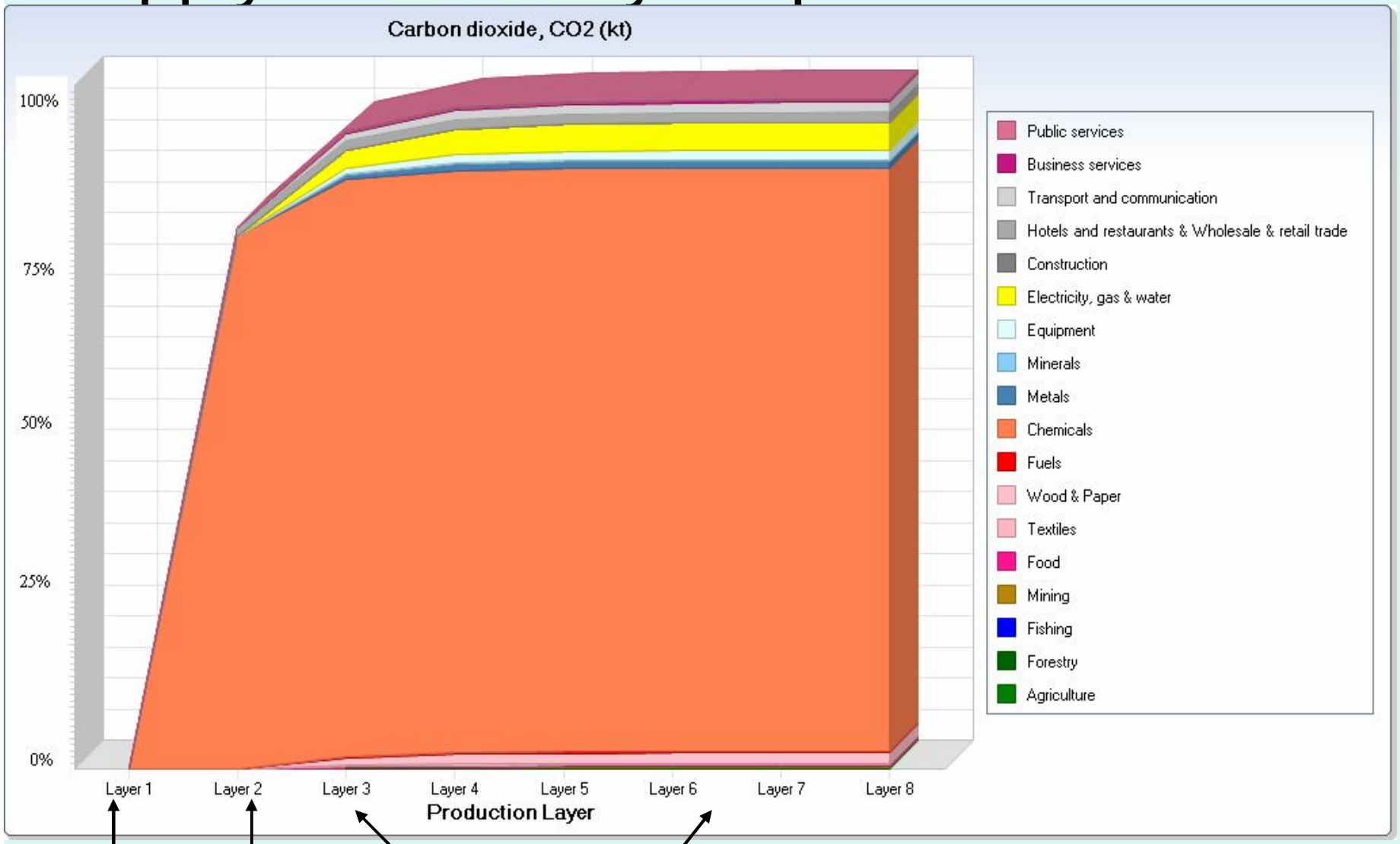
Procurement breakdown



Pharmaceuticals breakdown



Supply chain analysis: pharmaceuticals



NHS

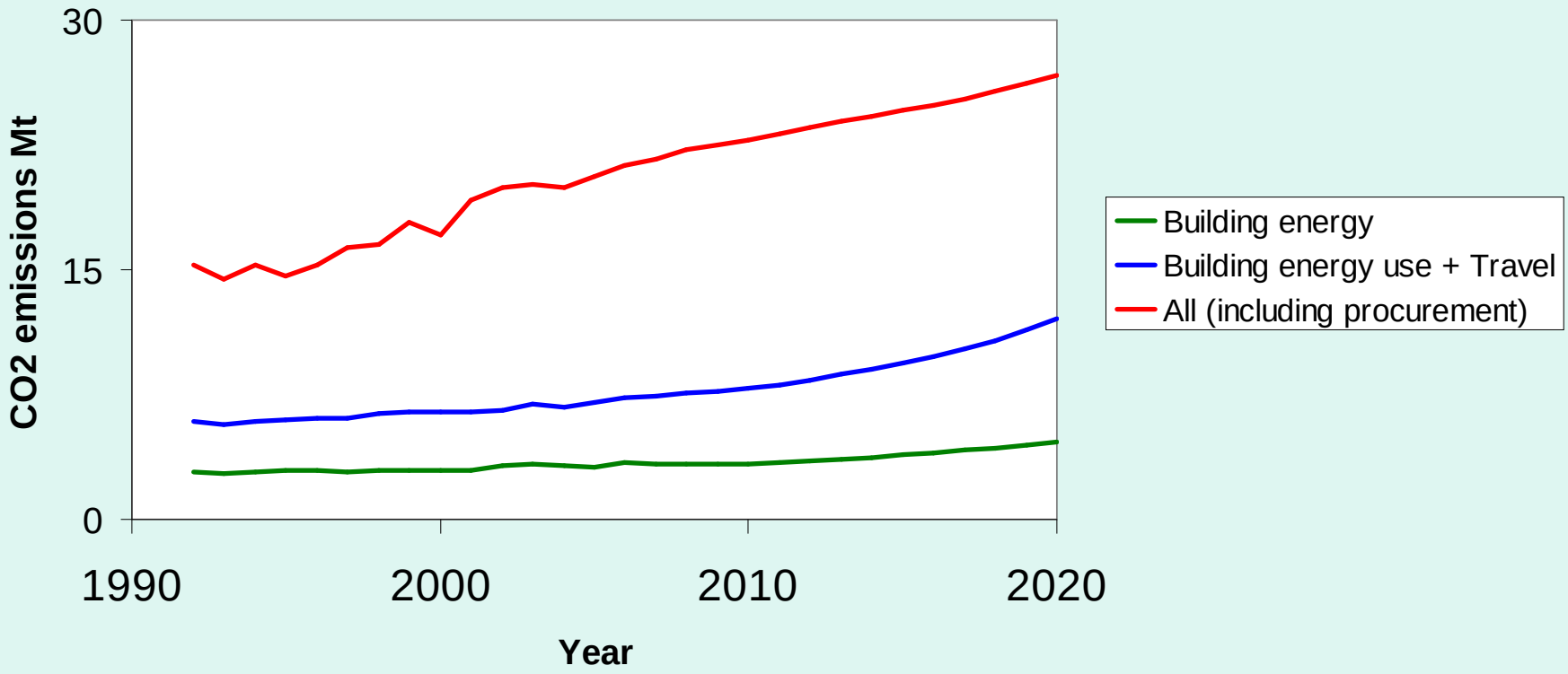
Pharma companies

Suppliers of Suppliers …

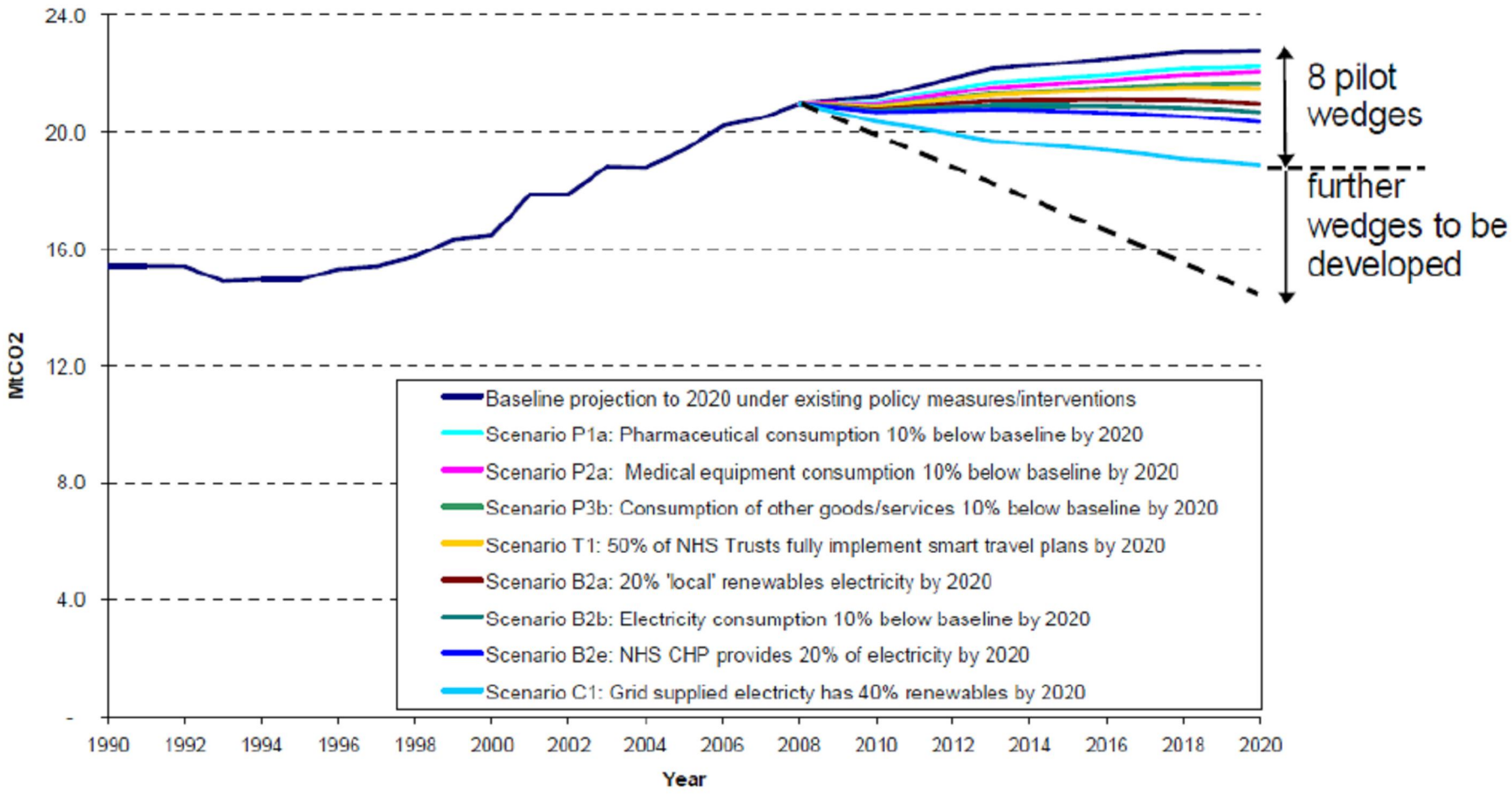
Current and future carbon analysis work

- Completing the evidence base
  - 1992-2004 time series foot-printing
  - Breakdown of procurement & medical equipment emissions
  - Identify key future drivers and trends
- Carbon emissions scenario model
- Trust level foot-printing model

NHS England projected CO2 emissions



Policy ‘wedge’ analysis



Benefits of carbon analysis

- Phase 1: initial foot-printing identified key emissions areas
- Phase 2: emissions projections will aid development of policies
- Phase 3: provides data for trusts in current financial year, as part of annual accounting system.
- Overall: understanding current and future emissions is a cornerstone for targeted interventions to reduce emissions.

Conclusions

1. **Climate Change**: It's real and is happening on our watch
2. **Legal duty**: UK has 80% emissions reductions target by 2050
3. **Carbon is entering the NHS's every day language**:
   - NHS Carbon reduction strategy
   - Carbon - a key new metric within the NHS Performance framework
   - Carbon Reduction Commitment (CRC)
   - PAS 2050 (Product life-cycle emissions)
4. **Leading from the front:**
   - Duty to act as a public sector exemplar
   - The big ripple: 1.3M staff
   - Health co-benefits: for patients, the population and the healthcare system
   - Lowering organisational risk: cost reductions and energy resilience

Thank you

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