Environmental accounting applications for Sustainable Consumption and Production policies

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Introduction

Relatively new policy area

Four broad themes

- Sustainable production and resource efficiency
- Sustainable consumption and consumer behaviours
- Sustainable products and materials
- Government showing leadership

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Sustainable production: policies targeted at different industrial sectors

- Introducing regulatory and fiscal measures to reduce pollution and reduce consumption of natural resources
- Encouraging sector sustainable development strategies and commitments
- Providing advice to businesses about opportunities for resource efficiency, energy audits etc
- Developing the environmental goods and services (EGS) sector

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Sustainable production: key data sources

- Physical flows accounts
- Data on types of businesses
- Business attitudes and behaviours
- Environmental expenditures and environmental taxes
- Environmental Goods and Services sector

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Sustainable production: applications (1)

- Environmental performance of main manufacturing and service sectors compared with GVA
- Monitoring and setting targets for the environmental performance of individual sectors
- Providing briefing on the environmental performance of other sectors re sustainability strategies
- Comparing the improvements in resource efficiency claimed by Government support agencies with actual changes in efficiency in different sectors

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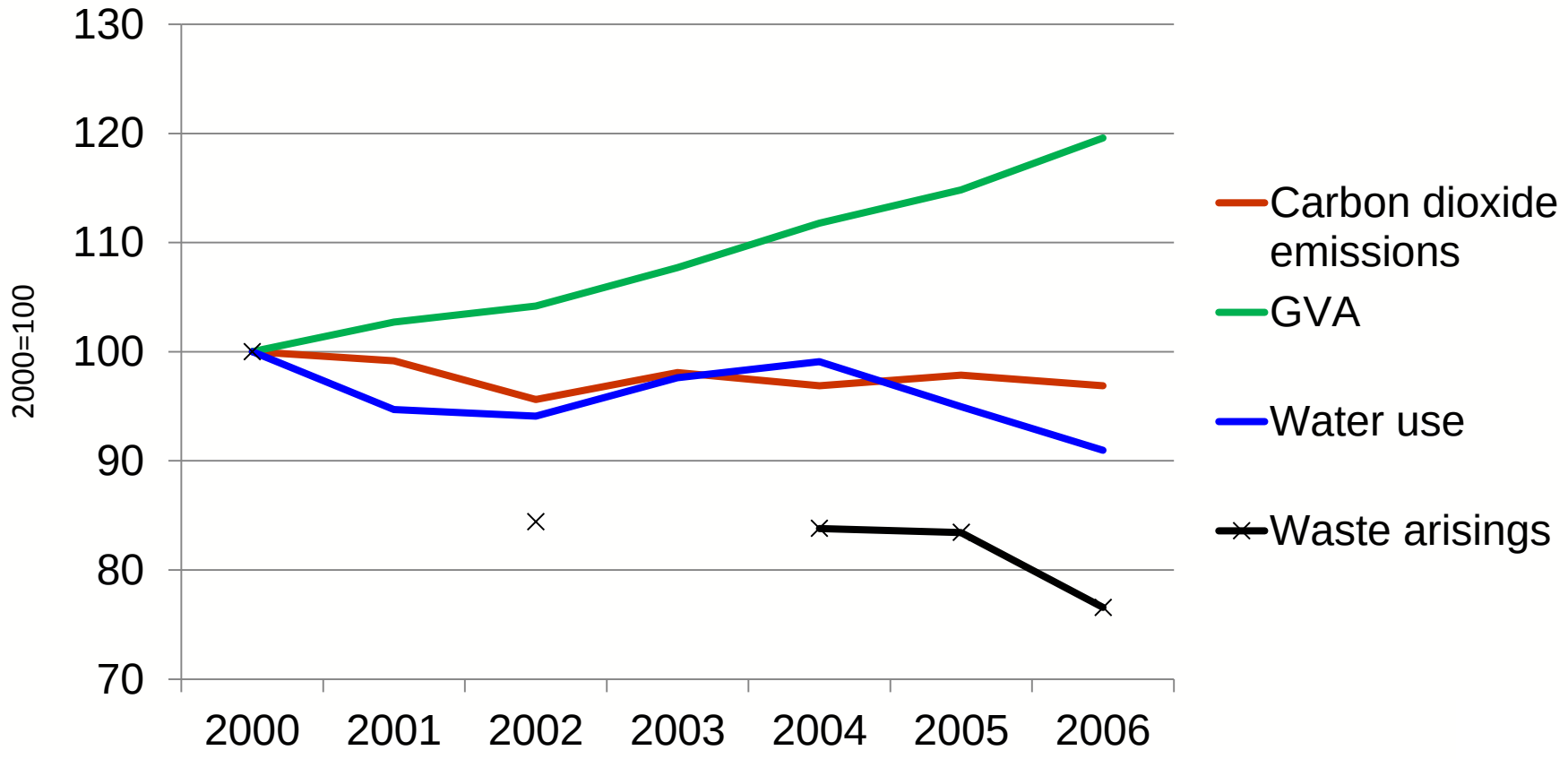
Environmental performance of main UK manufacturing and service sectors



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Sustainable production: applications (2)

- Structural decomposition analysis
- Estimating the incidence on different economic sectors of proposed new taxes such as the Climate Change levy
- Informing the strategic targeting of the Environment Agency's monitoring of the environmental impacts of different industrial sectors
- Annual reporting of Sustainable Development Indicators
  - decoupling in the construction industry
  - overall environmental impact of the public sector

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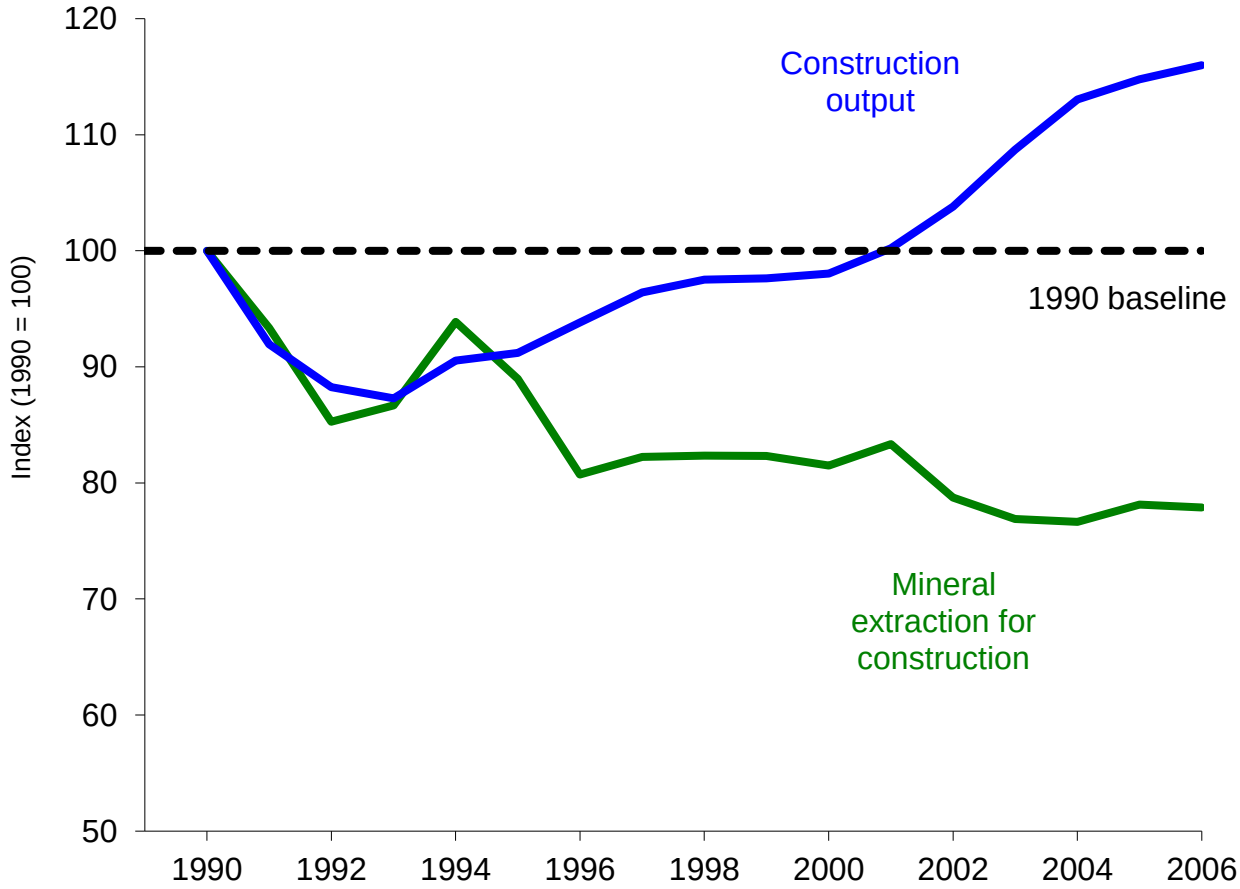
Decoupling of resource extraction from UK construction output



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Sustainable production: potential applications

- Targeting support for innovation and sustainable skills through the development of accounts covering the environmental goods and services sector
- Benchmarking of business impacts through the combination of process data and sectoral input-output tables.

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Sustainable consumption policies

- Encouraging behaviour change is about raising awareness
  - ranges from the introduction of publicity campaigns and incorporation of discussions within the school curricula
  - through to the imposition of mandatory metering systems
- Supported by policies to
  - restrict the availability of certain less sustainable products (‘choice editing’)
  - reduce price differentials between sustainable and less sustainable products
  - actions taken to provide recycling facilities and support the market for recycled goods

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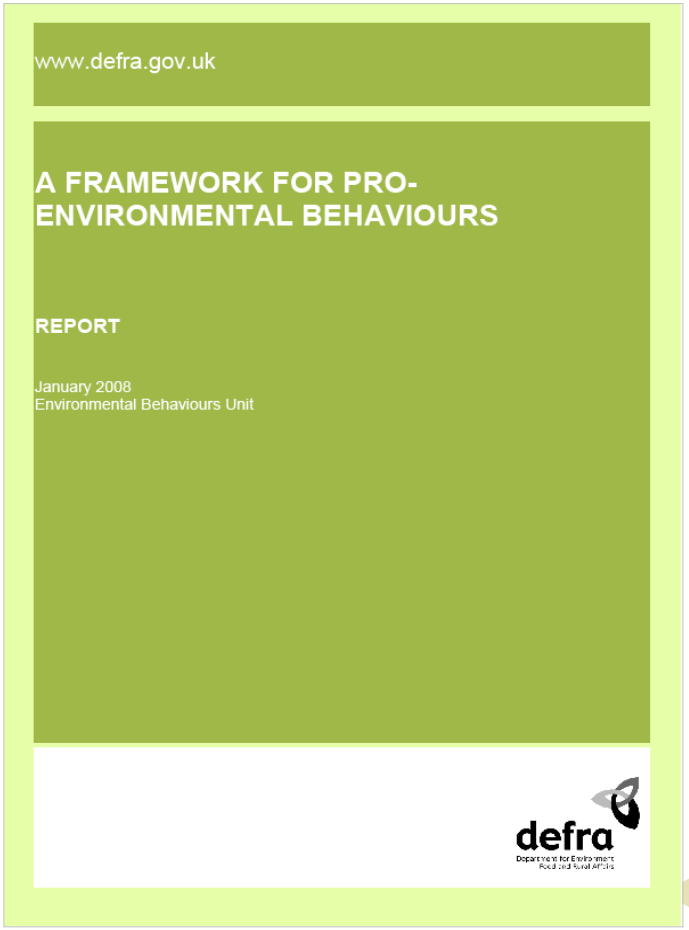
Pro-environmental behaviours

1. Insulate homes
2. Manage energy use
3. Micro-generation
4. Recycle waste
5. Waste less
6. Reduce water use
7. More efficient cars
8. Travel locally without car
9. Cut short haul flights
10. Use energy efficient products
11. Buy local food in season
12. Adopt better diet



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Sustainable consumption: key data sources

- Physical flow accounts, particularly if linked with household spending through the COICOP classification, can help show the proportion of environmental impacts that result from different types of household activities
- Public attitudes surveys, which identify changes in behaviour which can then be linked with information on impact of those behaviours
- Other household survey information for example on travel patterns and food consumption

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Sustainable consumption: applications

- Overall performance
- Impacts of key behaviours
  - Food
  - Travel
  - Water use

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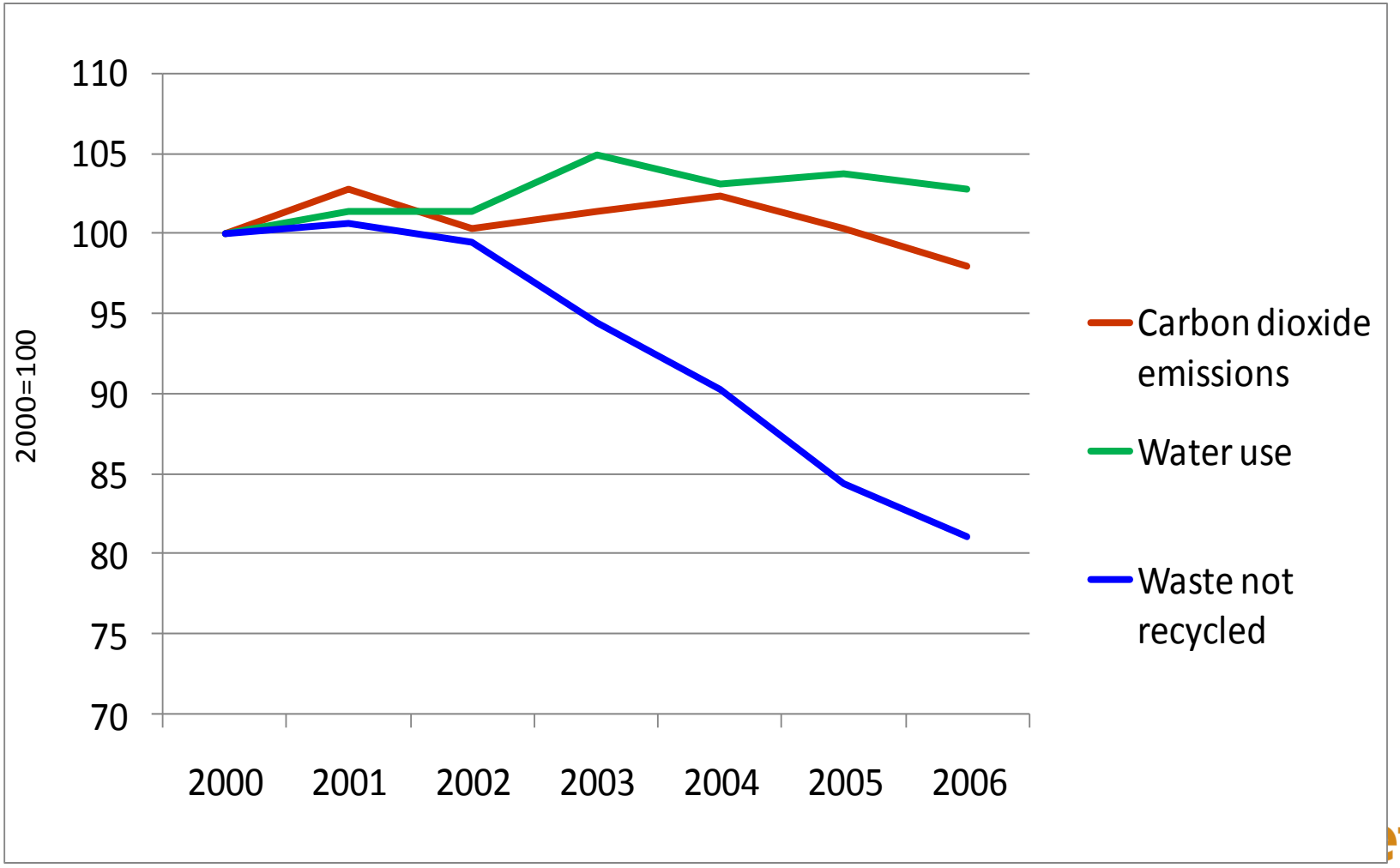
Environmental impact of UK households



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Key behaviours and impacts

Behaviour goal	Impact (kg/hh pa)	Current take-up
Insulate home	750	70%
Manage energy use	530	58%
Micro-generation	350	<1%
Recycle waste	540	71%
Waste less	600	64%
Reduce water use	140	52%
More efficient cars	780	27%
Travel locally without car	750	29%
Cut short haul flights	1,120	28%
Use energy efficient products	140	62%
Buy local food in season	10	37%
Adopt better diets	260	6%

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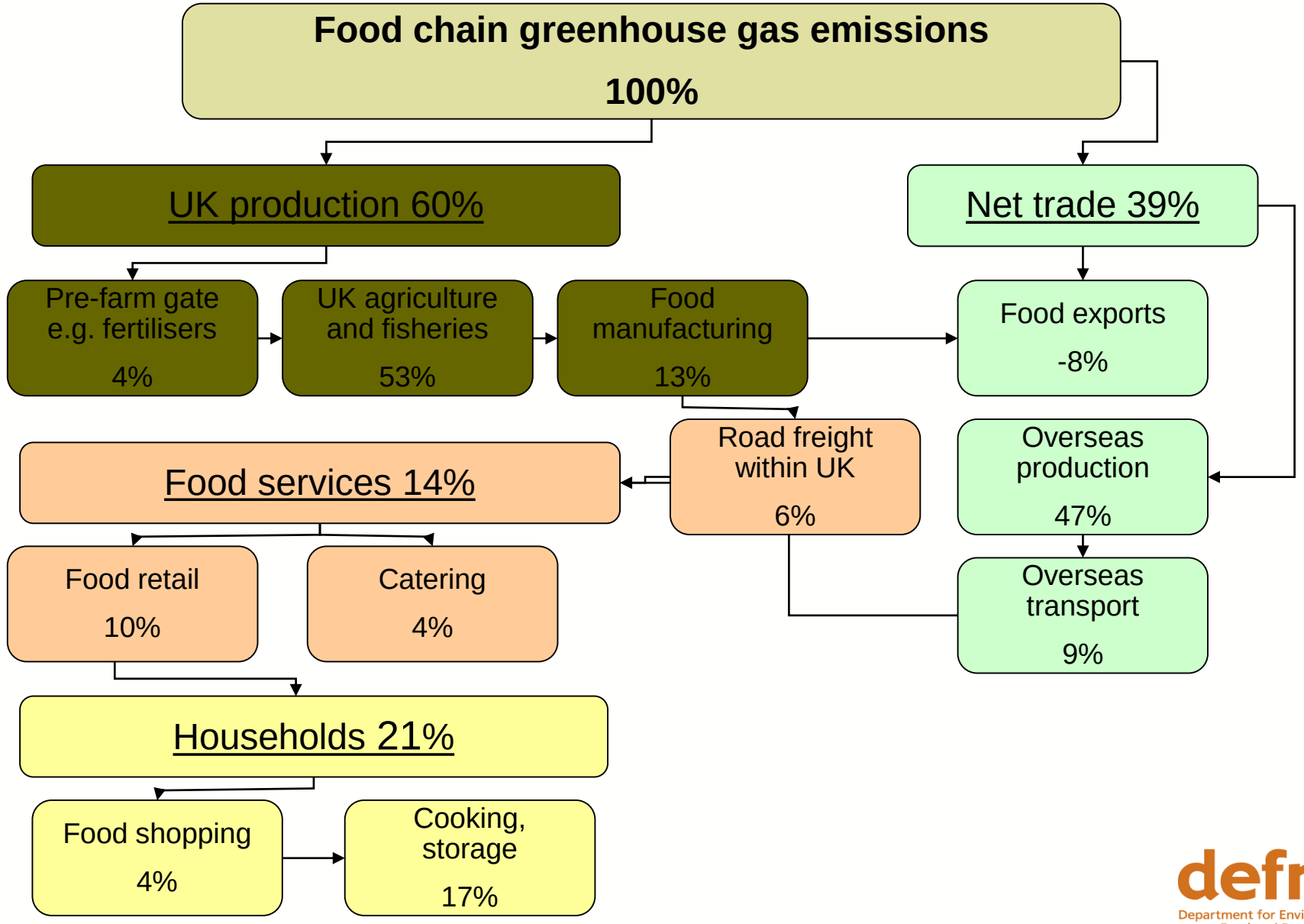
Mapping greenhouse gas emissions and the food chain



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Mapping greenhouse gas emissions and water use

Water supply treatment
1 mtCO2e

Direct abstractions

15,350mcm

20,800mcm

Water company admin
0.2mtCO2e

Water distribution
0.6mtCO2e

3,600mcm

Leakage
0.4mtCO2e

Business

3,700mcm

8,700mcm

Business
?mtCO2e

Homes
35mtCO2e

Waste water collection
0.2mtCO2e

Waste water treatment
2.1mtCO2e

Sludge to land
1-2 mtCO2e

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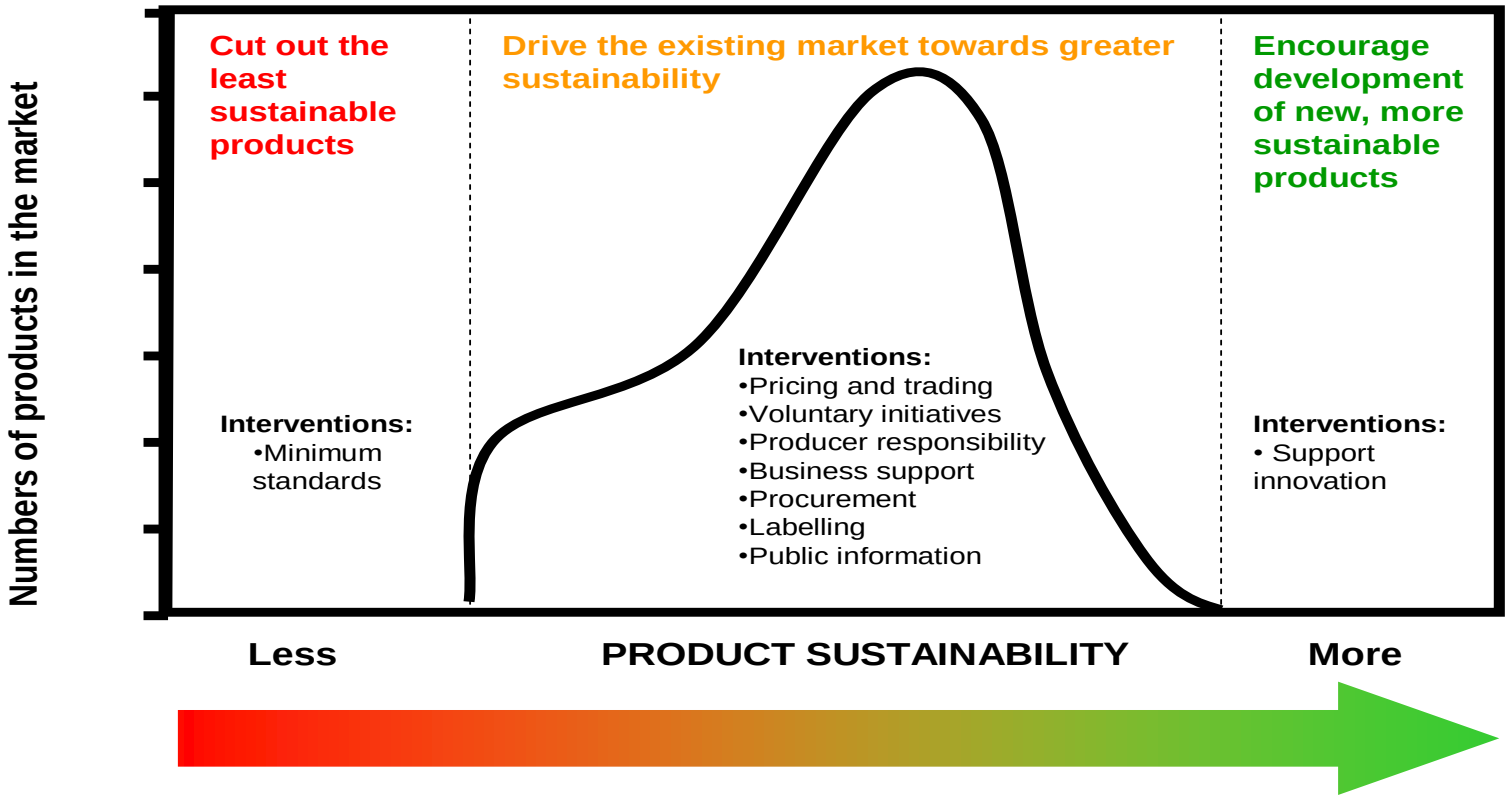
Sustainable products

PRODUCT INTERVENTIONS – Overall approach



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Sustainable products: applications

- EU's EIPRO study shows that food and drink, transport and housing products account for 70-80% of impacts
- The accounts can be used to narrow the focus down, but do not generally provide sufficient detail for most applications
- Accounts are most relevant as sources of information about the overall context of products policy
- They have been used to relate the coverage of the domestic appliances covered by integrated products policy with changes in overall electricity consumption within the home
- Also used for carbon footprinting applications
  - Importance of emissions embedded within capital formation
  - How emissions from services are spread across a wide supply chain
  - The contribution of technological improvements in products towards climate change targets

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Sustainable materials: applications

- There are no substantive examples from the UK – contributions required!

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Government showing leadership

Policy activities:

- Government being seen to manage its own operations in a sustainable manner and meeting its own sustainability targets
- Government using its purchasing power to leverage change amongst its suppliers and ensuring the sustainability of its supply chains

Two different approaches

1. Top down – data from national statistics sources
2. Bottom-up – data from government organisations

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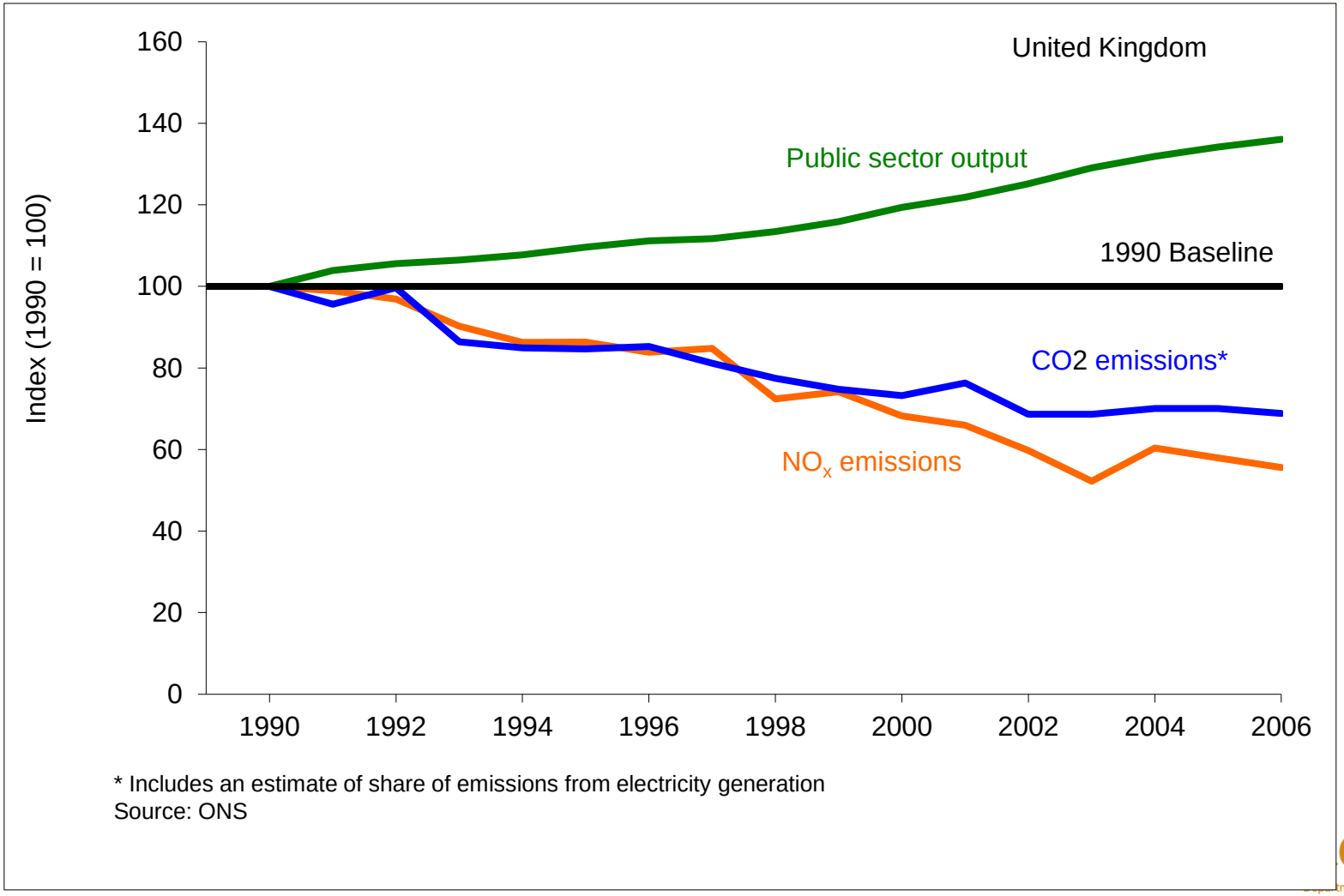
Sustainable Government operations



* Includes an estimate of share of emissions from electricity generation
Source: ONS

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Sustainable procurement priorities

1. Construction
2. Health and Social Work
3. Food
4. Uniforms, clothing, textiles
5. Waste
6. Pulp, paper and printing
7. Energy
8. Office machinery and computers
9. Furniture
10. Transport (business travel, motor vehicles)

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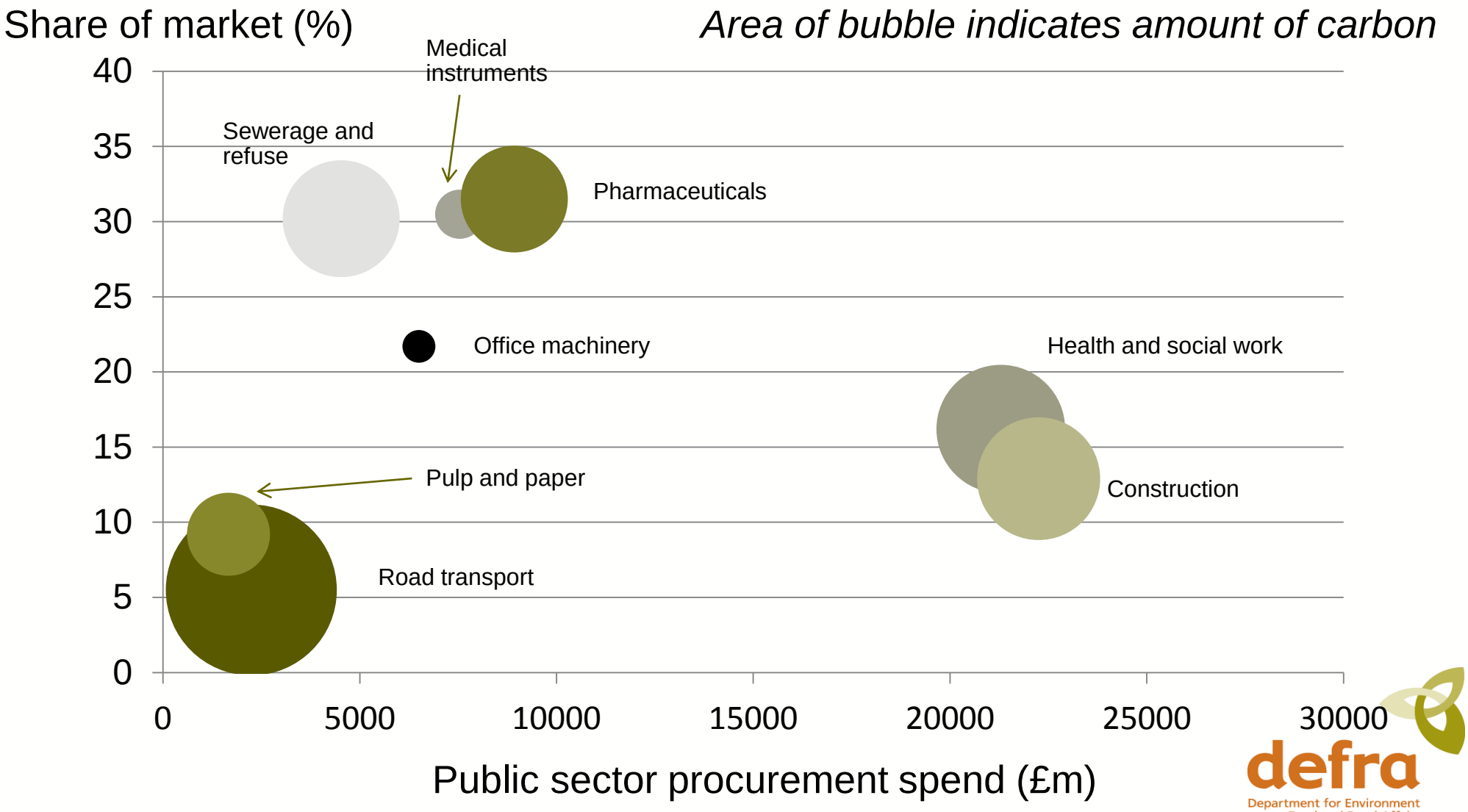
CO2 emissions from UK public sector share of energy used in production (first order effect, excluding electricity)



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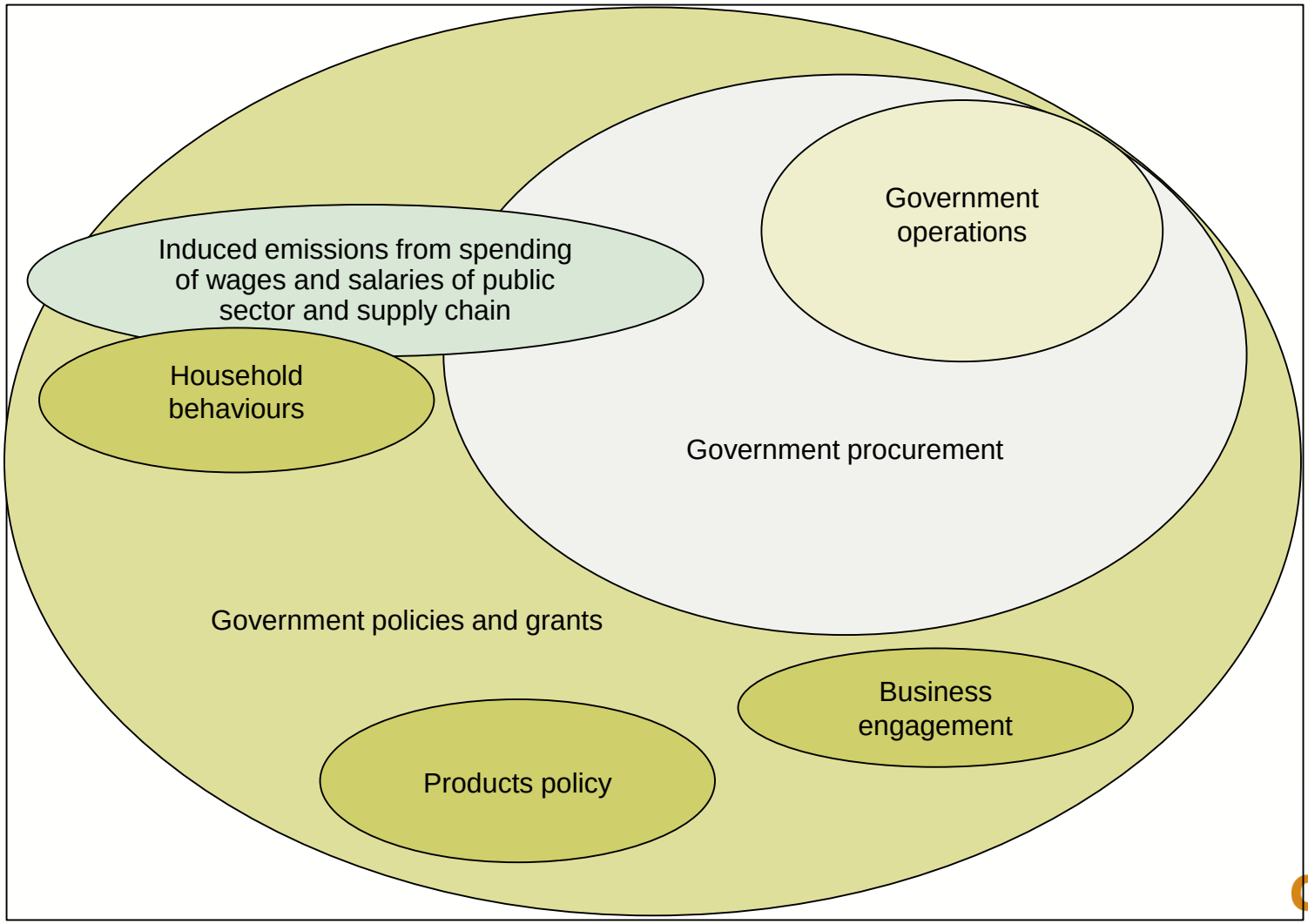
Scottish Government carbon accounting project



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General conclusions

- Environmental accounts data is generally used to provide broad strategic direction to SCP policies
- Strong suite of applications as far as resource efficiency is concerned
- Less useful for sustainable consumption policies as more disaggregated data is needed
- Usually not sufficiently detailed for products policy, but some useful applications for carbon footprinting
- On-going requirement to reconcile top-down and bottom-up data sources

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Aggregate indicators

- Accounts are widely used to generate aggregate indicators, although none adopted yet for the UK
- Ecological footprints, Environmentally-adjusted National Accounts aggregates and EMC are likely to be increasingly based on Accounts data

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Points for discussion

- Does the LG agree that an SCP policy framework is potentially a useful showcase of SEEA applications?
- Can LG members contribute further examples, especially of sustainable consumption and of sustainable products and materials policies?
- Are the weaknesses described real problems, and if so how can they best be addressed?

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