Towards a low carbon UK

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IPCC estimates on how much we need to reduce emissions

Stabilisation level (ppm CO2-eq)	Global Mean temp. increase at equilibrium (°C)	Year of peak emissions	Cut in 2050 global CO2 emission compared to 2000 (%)	Reduction of average annual GDP growth rates (%)
445 – 490	2.0 – 2.4	2000 - 2015	-85 to -50	< 0.12
490 – 535	2.4 – 2.8	2000 - 2020	-60 to -30	
535 – 590	2.8 – 3.2	2010 - 2030	-30 to +5	<0.1
590 – 710	3.2 – 4.0	2020 - 2060	+10 to +60	< 0.05
710 – 855	4.0 – 4.9	2050 - 2080	+25 to +85	
855 – 1130	4.9 – 6.1	2060 - 2090		

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UK commitments to reduce emissions

- 1992 2000 emissions same as 1990
- 1997 Kyoto Target – 12.5% 1990 to 2010
- 1997 Domestic Goal -20% for CO2
- 2003 Energy White paper -60% by 2050
- 2008 Climate Change Bill

  60% below 1990 levels by 2050

  26-32% below 1990 levels by 2018/22

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Summary of UK GHG emissions in 2006 relative to 1990 (%)

	Without Trading	With Trading
Kyoto basket (-12.5%)	-16.4	-20.7
Carbon Dioxide (-20%)	- 6.4	-12.1
Methane	- 53	
Nitrous Oxide	- 40	
Industrial gases	- 25	

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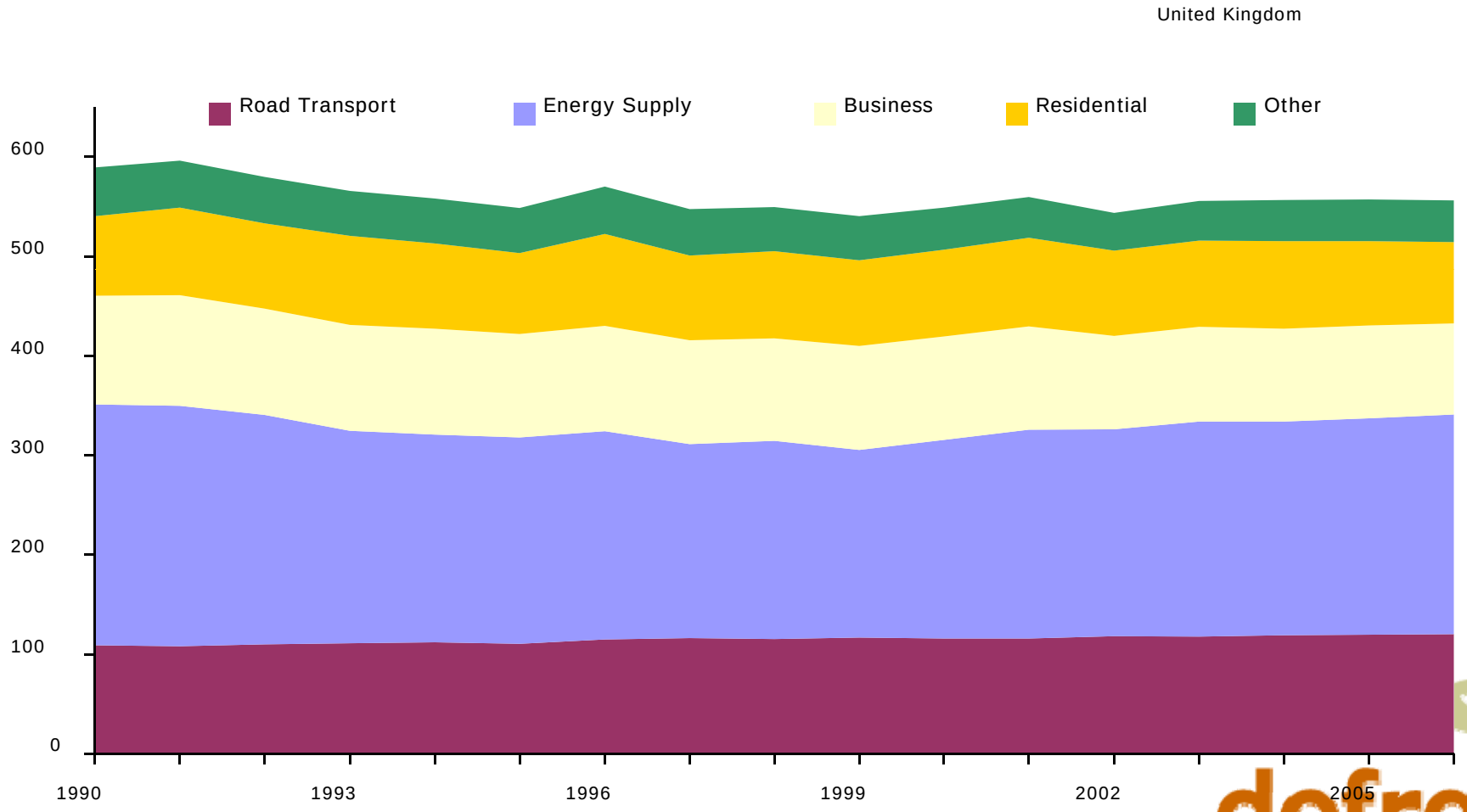
UK Carbon dioxide emissions by source: 1990-2006



Source: AEA Energy & Environment

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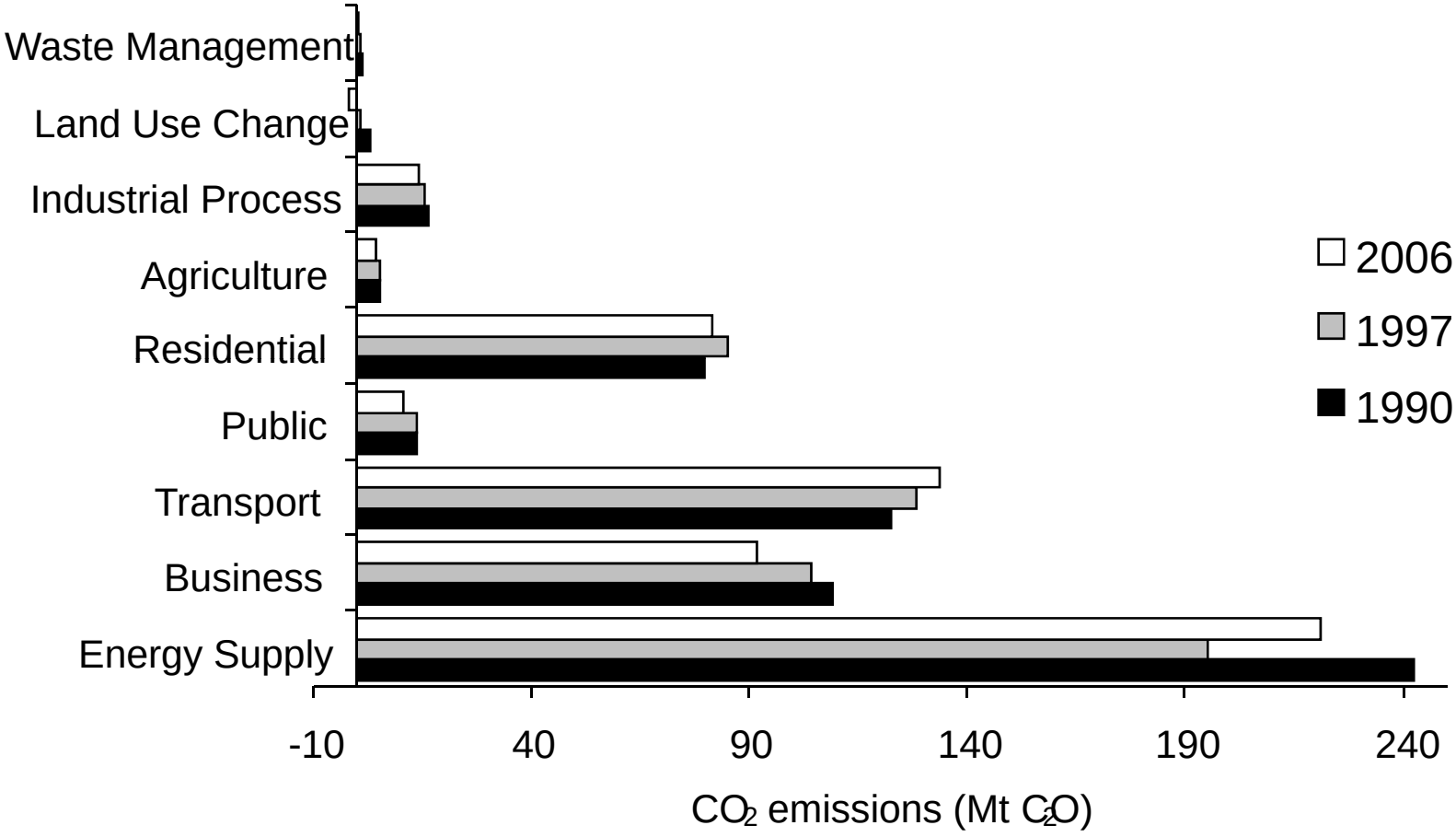
CO2 emissions by sector



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CO2 Gains and Challenges

- CO2 - 85% of UK GHG emissions
- CO2 emission intensity down by 37% from 1990 to 2006.
- Improvements seen in the buildings sector – energy efficiency gains
- Transport modest growth, despite massive increase in car use.
- Electricity supply sensitive to market conditions and fuel switching
- CO2 needs a long term price signal

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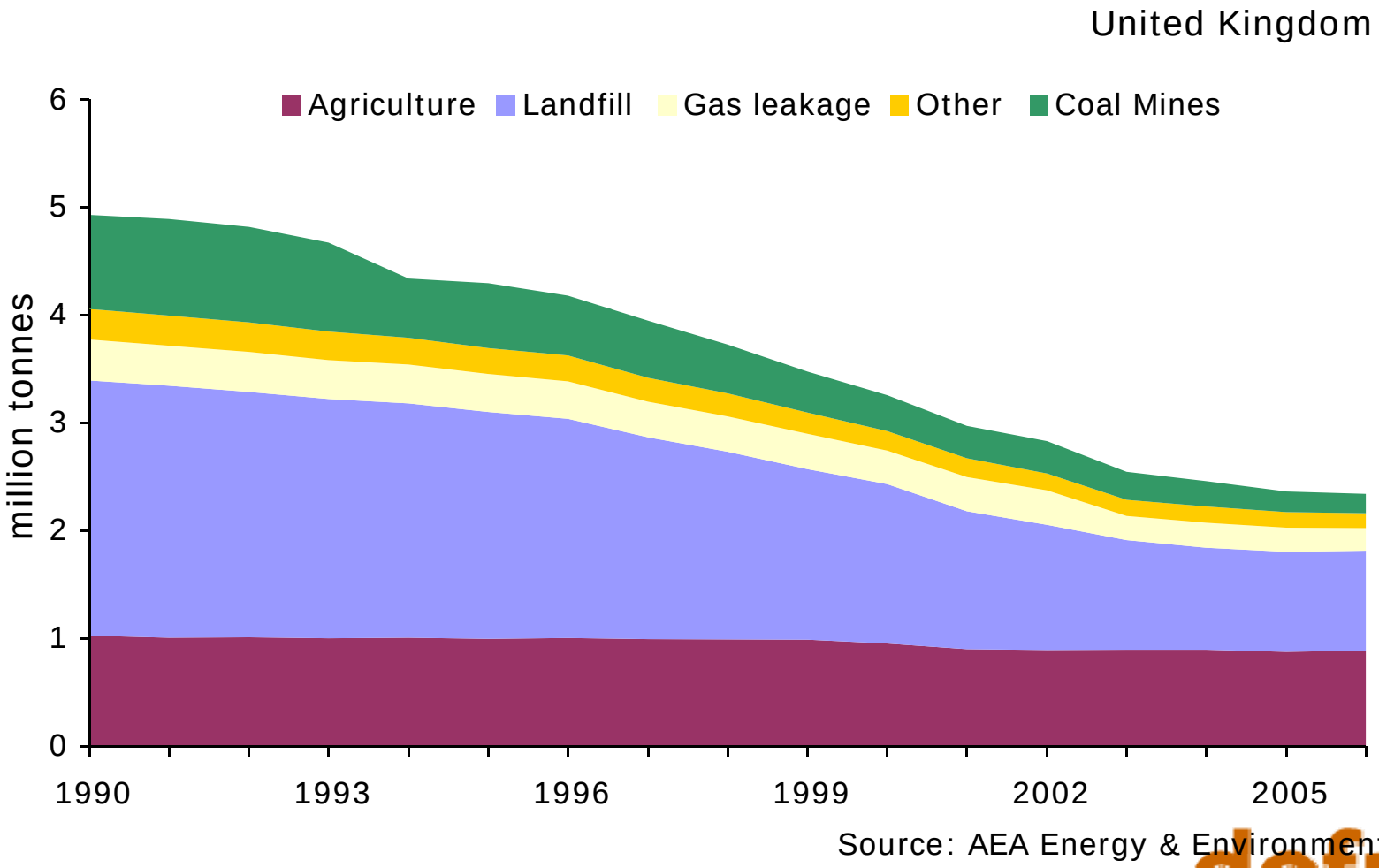
UK Methane emissions source: 1990-2006



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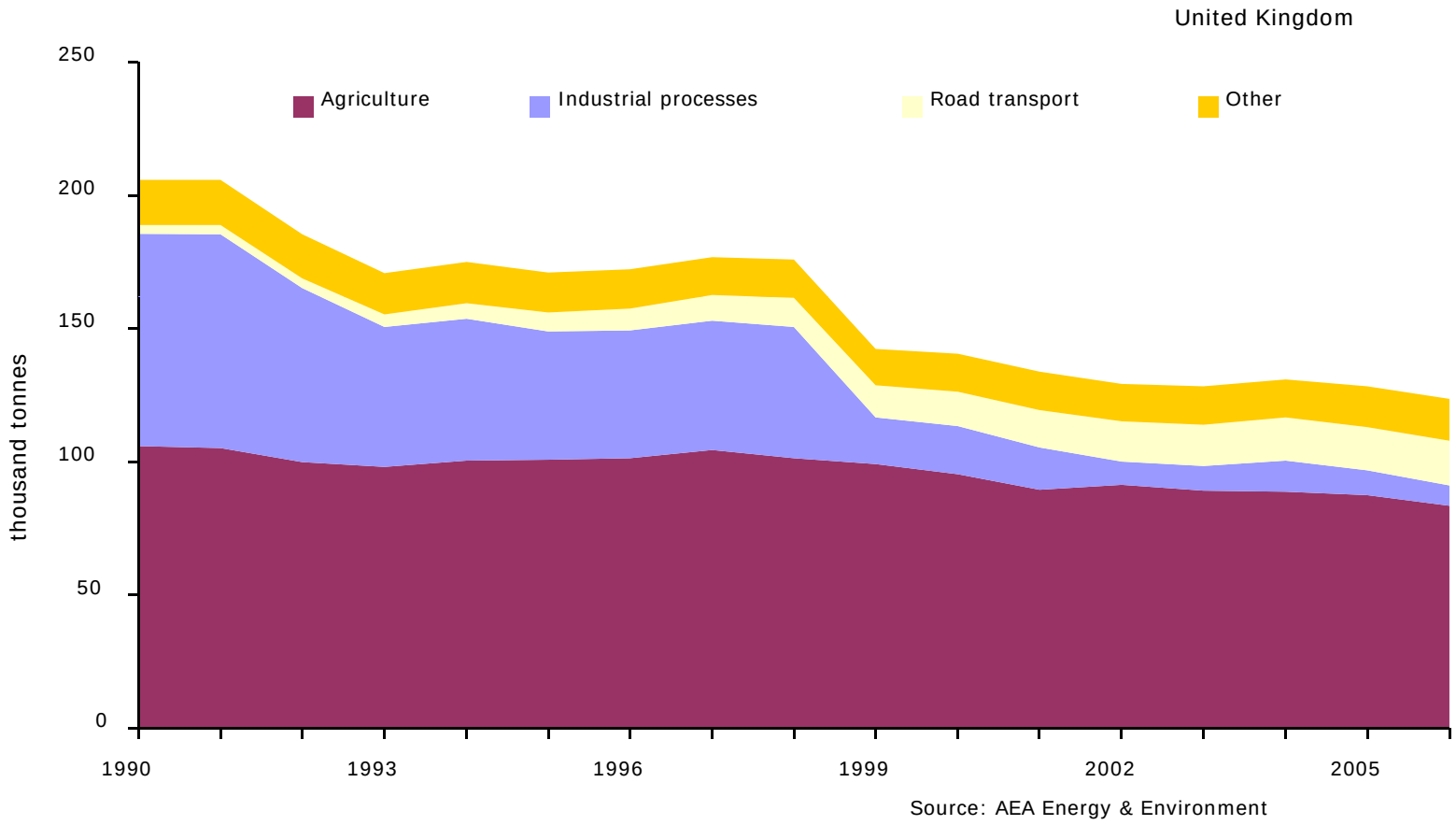
UK Nitrous oxide emissions by source: 1990-2006



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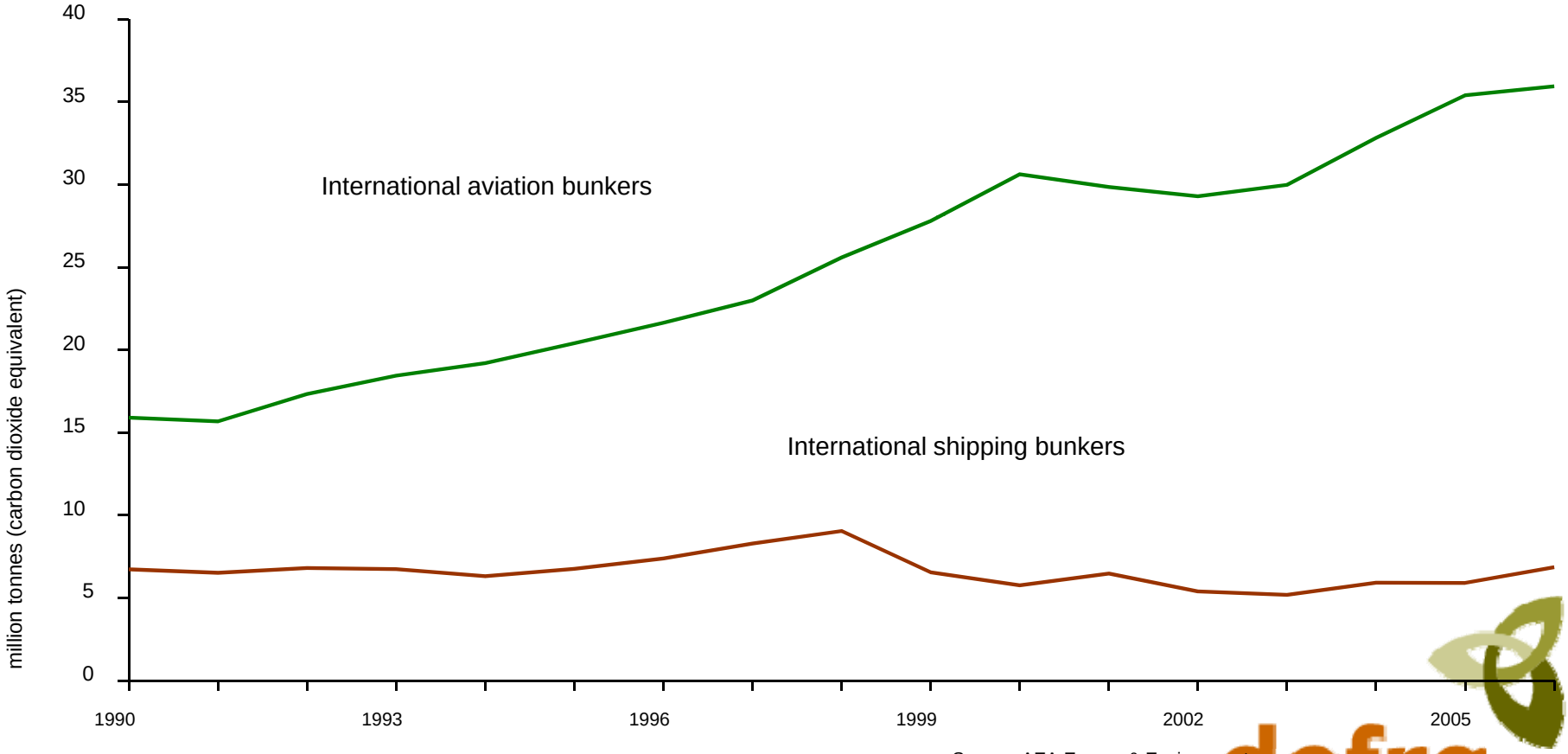
Greenhouse gases from UK-based international aviation and shipping bunkers, 1990-2006



Source: AEA Energy & Environment

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Other gases and international aviation

- Non CO2 gases 15% of emissions. Significant gains possible – but residual emissions related to land use/agriculture
- International aviation is an additional 5.3% of UK emissions – strong growth a global phenomenon

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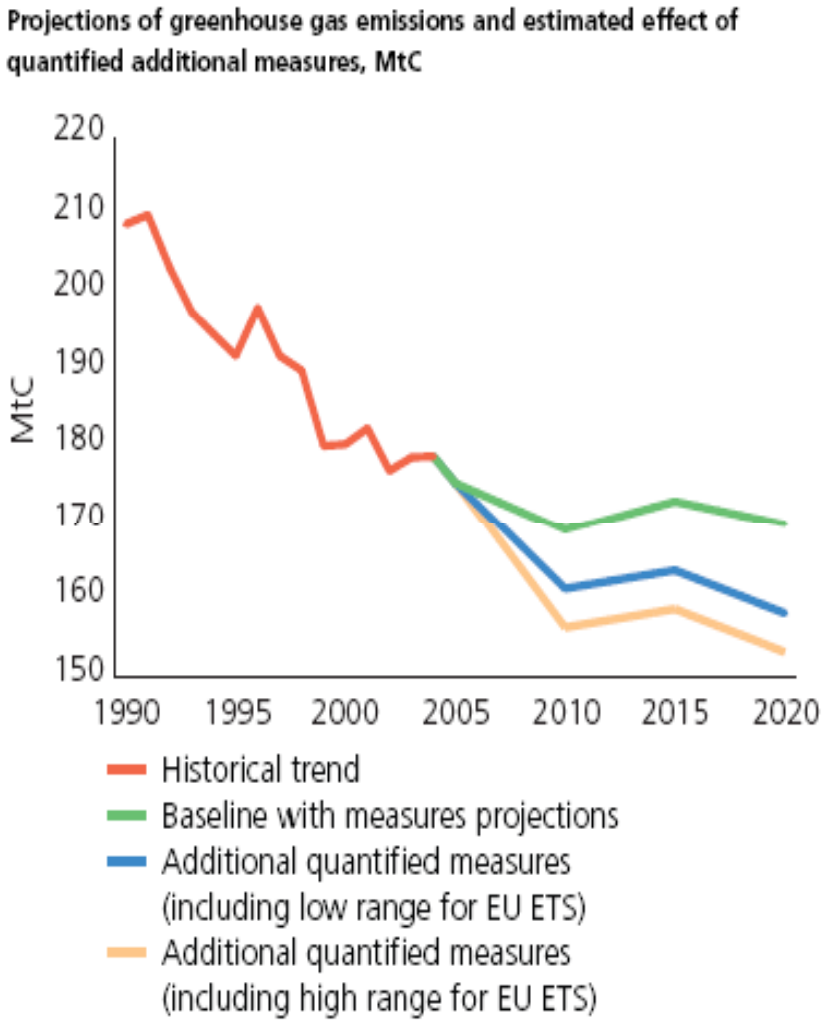
Projected UK greenhouse gas emissions to 2020



- Domestic CO2 emissions expected to be down by 16.2%
- 2010 emissions of all gases expected to be 23.6% below 1990 levels
- Energy review gives CO2 reductions of between 21.6 and 25.1% by 2020

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The Climate Change Bill

New legislation currently before parliament to commit the UK to achieving major reductions in CO2 emissions

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Key elements of the Climate Change Bill

Targets	CO_2 emission reductions of at least 60% by 2050 and 26-32% by 2020, through action in the UK and abroad
Budgets and accountability	Five-year carbon budgets to set trajectory Annual progress reporting to Parliament
Committee on Climate Change	New independent body to advise Government on carbon budgets and least cost savings
Measures to reduce emissions	Powers to introduce emissions trading schemes quickly and easily, including new Carbon Reduction Commitment. Bio-fuels. Waste.

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Key elements of the Bill (1): Targets

- Put 2050 target (to reduce CO2 by “at least 60%”) and 2020 target (26-32% reduction in CO2) into law
- New Committee on Climate Change will advise on whether the 2050 target should be tightened up to 80%
- Committee will also look at the implications of including:
  - Other greenhouse gases;
  - Emissions from international aviation and shipping

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Key elements of the Bill (2): Five-year budgets and annual accountability

- 5-year carbon budgets, set three periods ahead on advice from the Committee on Climate Change
- Transparent budget-setting process: Committee advice and Government decision must both be published
- Annual reporting to Parliament by independent Committee, with annual Government response
- Annual reporting to Parliament on all UK greenhouse gas emissions, including from international aviation and shipping

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Key elements of the Bill (3): Committee on Climate Change

- Independent body to advise on the level of carbon budgets
- Committee will take account of scientific, economic, social and international factors
- Advisory role on targets and budgets
- Strengthened independence (will appoint its own staff)
- Increased funding for analysis

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Key elements of the Bill (4): Measures to reduce emissions

- Enabling powers to introduce future trading schemes to help tackle climate change
- First use of these powers will be to introduce the new Carbon Reduction Commitment
- Also taking powers in the Bill to enhance the Renewable Transport Fuels Obligation (which will increase use of transport bio-fuels)
- Providing a power to pilot local authority incentives for household waste minimisation and recycling

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Current key issues as debated in Parliament

- General support for the Bill, but calls to strengthen it…
  - Level of the 2050 target, and whether it should be CO2-only
  - Include emissions from international shipping and (especially) aviation immediately
  - Binding quantified limits on the use of overseas credits to be set now
  - Annual milestones, sectoral targets, strengthened Government accountability

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Key lessons from the UK experience

- Long-term goals and policies should be based on evidence
- It is possible to reduce emissions while the economy grows
- This requires a rich mix of policies and measures.
- Giving carbon a price is a key element of success – trading is efficient
- Government regulation gives a clear long term direction to industry and society

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