

CARBON:

Payments for carbon sequestration and substitution by UK forests

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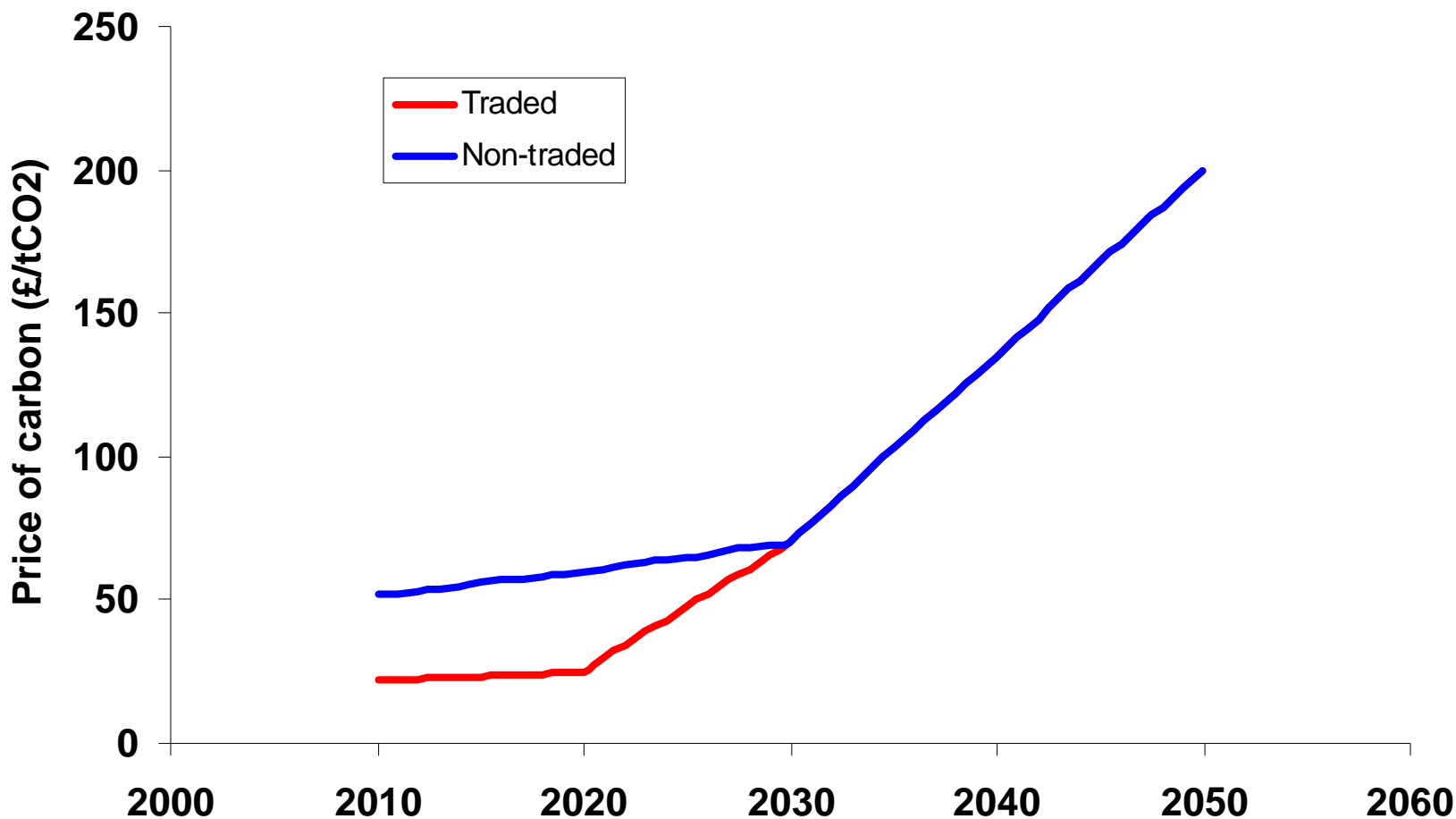
- Climate Change Act
 - Committee on Climate Change
 - 80% reduction in GHGs
- Renewable Energy Strategy
 - biomass/woodfuel - RHI
 - liquid biofuels - RTFO
 - electricity generation - ROCs
- UK Low Carbon Transition Plan
 - woodland creation
- Departmental Carbon Reduction Delivery plans

The UK Low Carbon Transition Plan

National strategy for climate and energy



- The UK's GHG emissions were about 600 million tonnes CO₂ equivalent in 2008
- UK forest biomass contains about 550 million tonnes of CO₂ - i.e. as much as the UK emits in a single year;
- UK forest soils contain about 4 billion tonnes CO₂;
- Timber and wood products in use contain about 330 million tonnes of CO₂;
- UK forests are currently removing about 15 million tonnes CO₂ a year - but this will decline;
- Woodlands planted since 1990 are removing about 2.5 million tonnes CO₂ annually.



http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/valuation/valuation.aspx



- Carbon stock:
 - 550 MtCO₂
 - £8 billion (current price)
 - £110 billion (2050 price)
- Annual increase in stock:
 - 15 MtCO₂/yr (in 2006)
 - £225 million (current price)
 - £3 billion (2050 price)
- Can forestry have access to these funds?
 - No
 - where is the additional action?

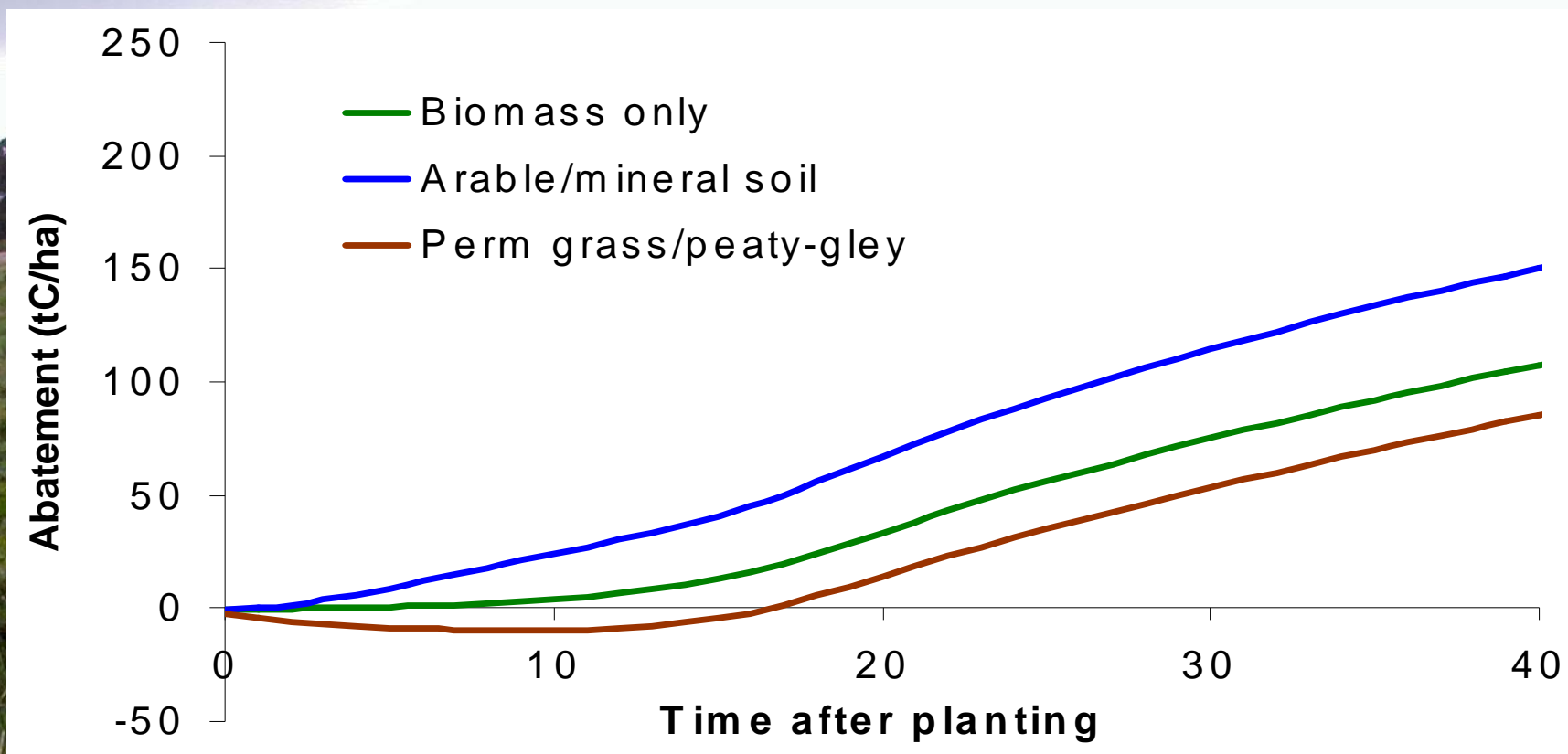
- Forests are a **reliable** way to lock up and store carbon
- Woodland creation is a **cost-effective** abatement (or mitigation) measure
- There are many **co-benefits** of woodland creation
- High up-front costs
- Delivers abatement in the long term - not the first three budget periods

Illustrative example not a target or commitment

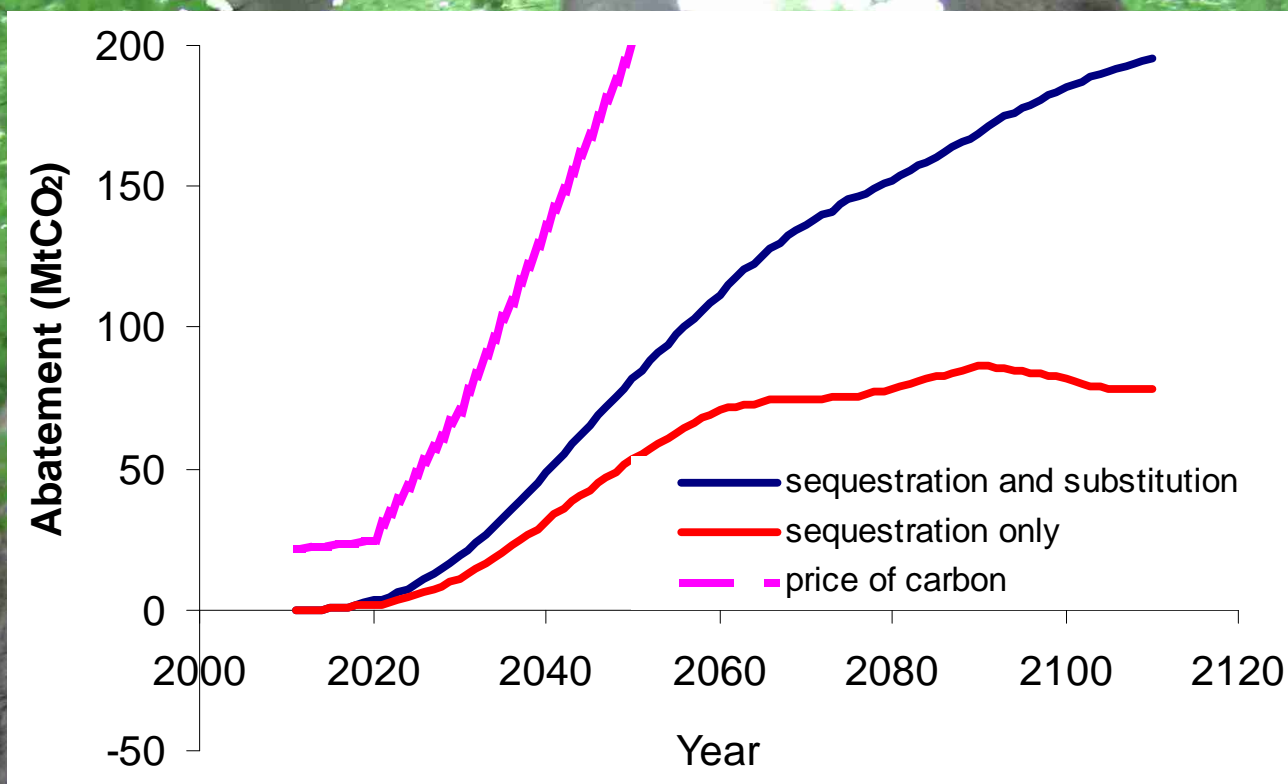
- 10,000 ha per annum new planting for 15 years
 - [woodland area 9.0 to 10.5%]
- Minimum of 50 million tonnes CO₂ abated by 2050
- No increase in public funding
 - [but £1.1 billion required over 15 years required]

'The Government will support a new drive to encourage private funding for woodland creation..... This will allow businesses and individuals to help the UK meet its carbon budgets, whilst delivering the other benefits that woodlands can bring'.





Carbon benefits of a 15-year 10,000 ha/yr woodland creation programme



- Timeframe critical
- Inclusion of substitution critical
- Numerous co-benefits
- Considered highly cost effective (~£20/tCO₂)

- Rules for carbon offset schemes are highly complex and high quality schemes should conform to a number of requirements, relating to:

Offsetting is not possible in the UK at the present time (whether voluntary or 'Kyoto compliant'), primarily because double counting would result

Annex G: What can I count as an emission reduction?

‘Rather than offset our unavoidable emissions and claim the credit for these emission reductions, [organisation name] has contributed £[cost] to [project name] in [location] in the UK. This project is expected to help the UK to meet its national target by reducing emissions by [number] tonnes of CO₂e from [start date] to [end date]’.

example, they could say:

<http://www.defra.gov.uk/environment/business/reporting/pdf/ghg-guidance.pdf>

- Silvicultural Standard for Good Woodland Carbon Management;
- Protocols for Carbon Measurement;
- Clear statement and quantification of GHG benefits
- Clear approaches to accreditation and verification
- Adherence to UK regulatory framework

Code of Good Practice for Forest Carbon Projects

Draft

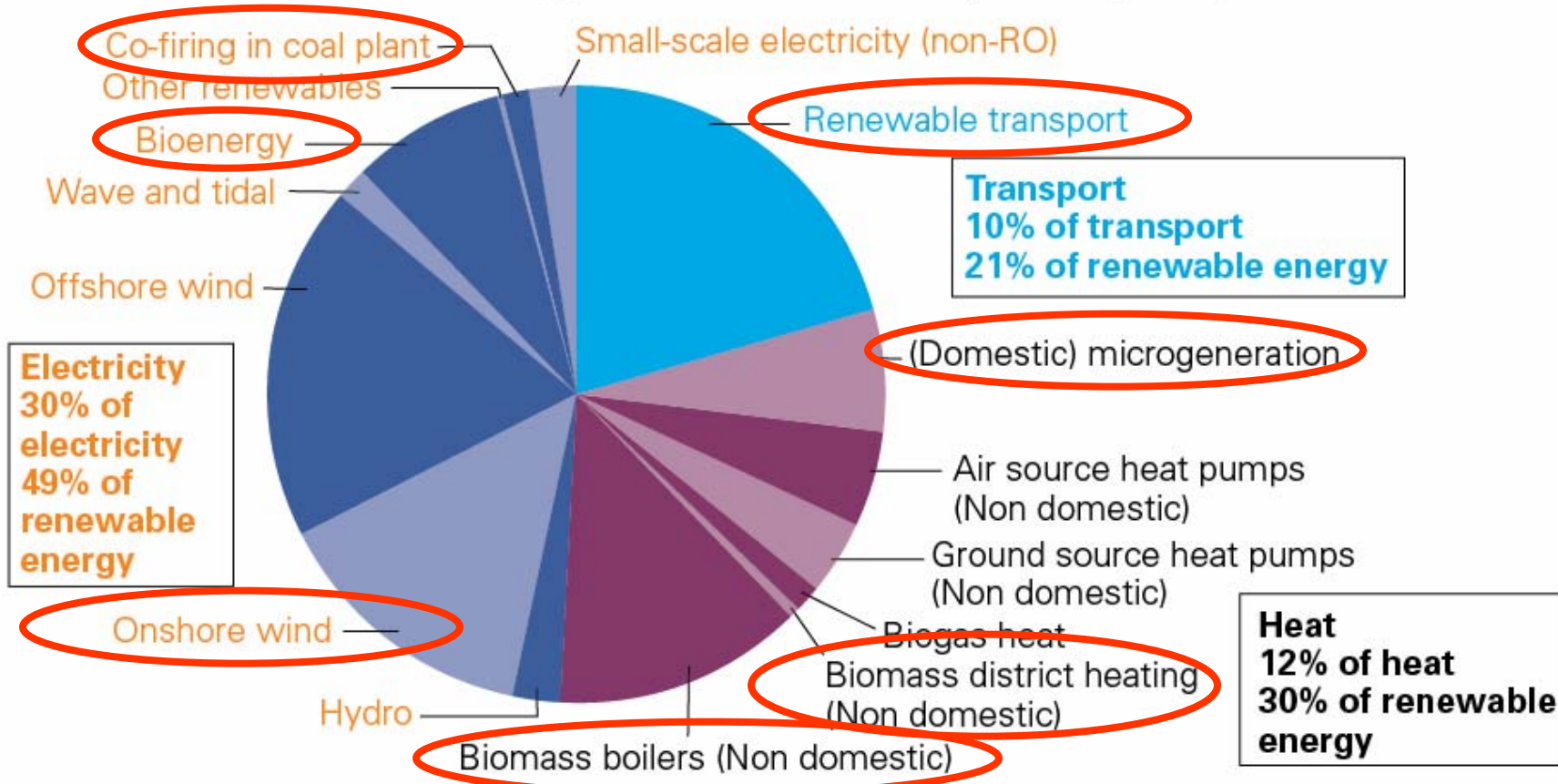


Our lead scenario suggests that we could see:

- **More than 30% of our electricity generated from renewables**, up from about 5.5% today. Much of this will be from wind power, on and offshore, but biomass, hydro and wave and tidal will also play an important role.
- **12% of our heat generated from renewables**, up from very low levels today. We expect this to come from a range of sources including biomass, biogas, solar and heat pump sources in homes, businesses and communities across the UK.
- **10% of transport energy from renewables**, up from the current level of 2.6% of road transport consumption. The Government will also act to support electric vehicles and pursue the case for further electrification of the rail network.

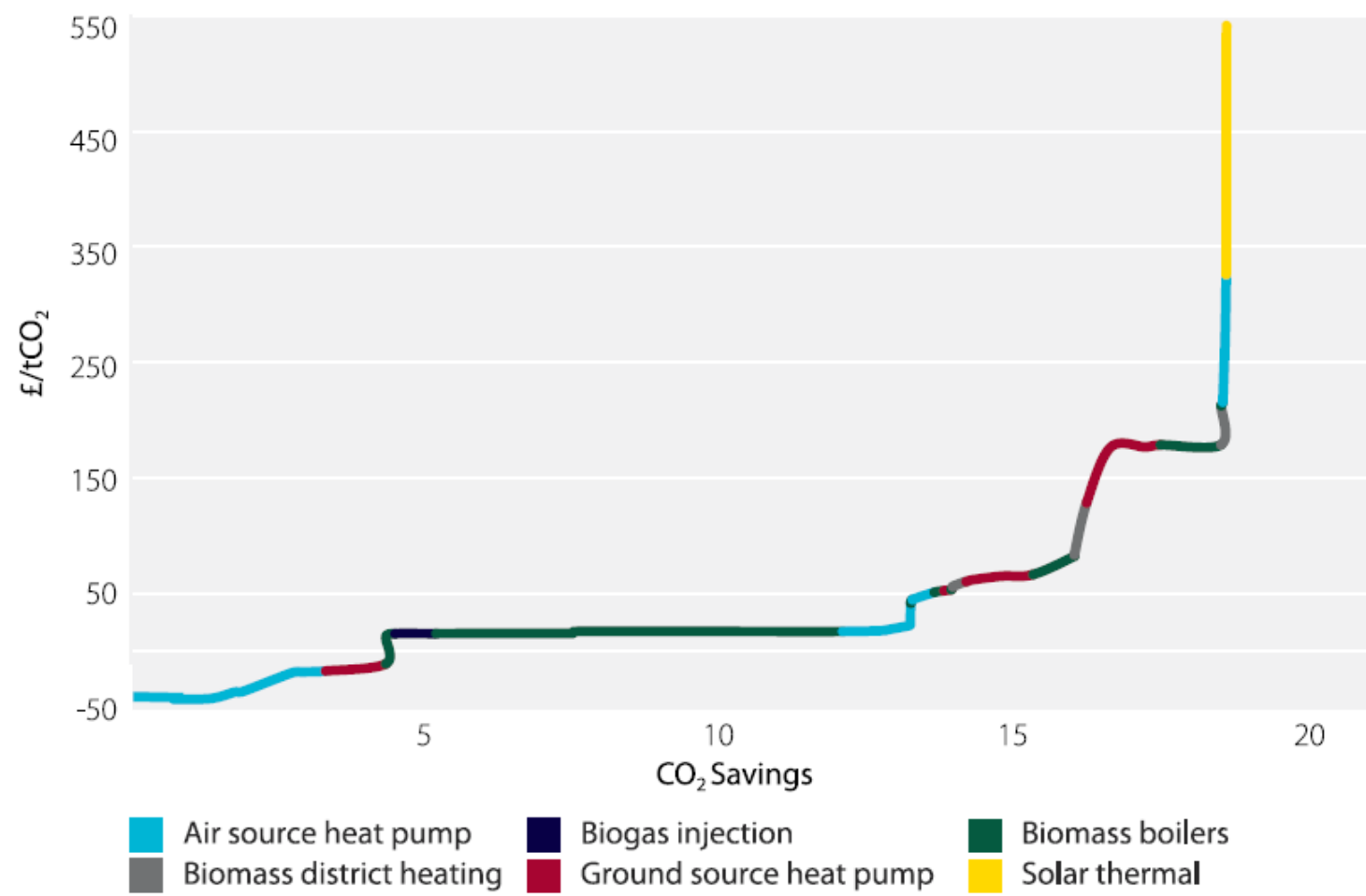
Chart 2.3:

Illustrative mix of technologies in lead scenario, 2020 (TWh)



Source: DECC analysis based on Redpoint/Trilemma (2009), Element/Pöyry (2009) and Nera (2009) and DfT internal analysis

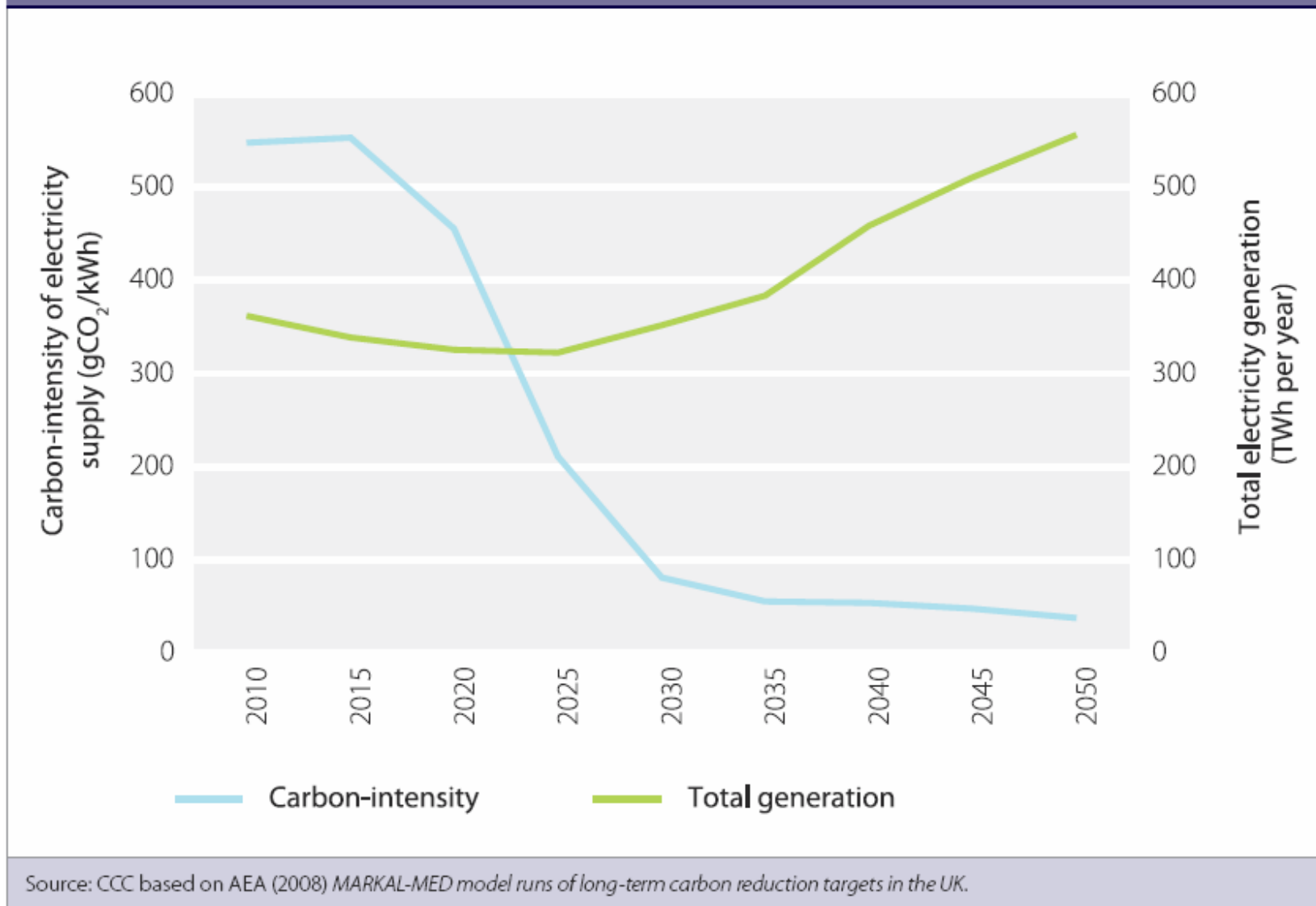
Figure 10 Renewable Heat in Central Scenario 2022

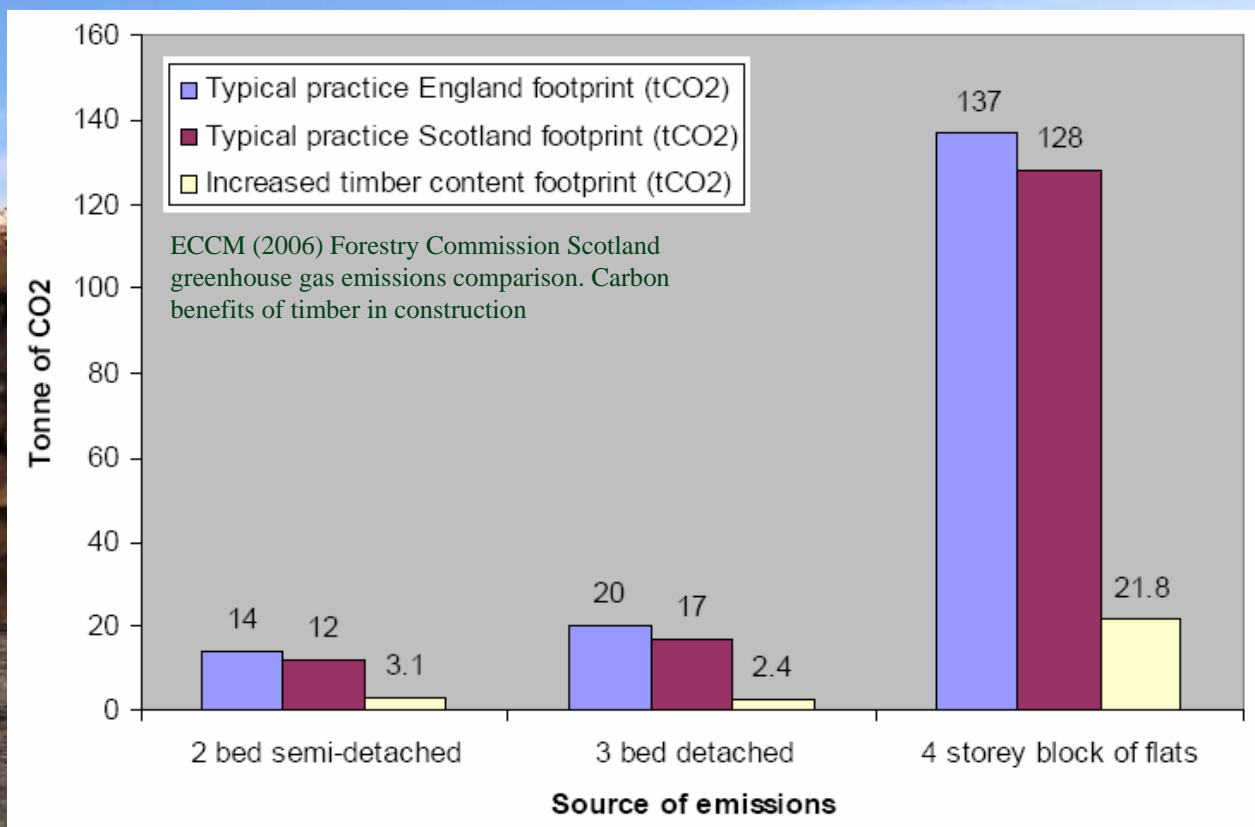


Source: NERA (2009).

Note: Where a technology appears at different points of the curve this reflects different applications (e.g. residential and non-residential, etc.).

Figure 6 Declining carbon-intensity and increasing generation of electricity to 2050





- Renewable Obligation certificates [\sim £12-50 per tonne CO₂]
- Renewable Heat Incentive (price per MWh to be announced in December)
- RDPE axis 1 (harvesting equipment)
- RDPE axis 2 (woodland creation grant and some ES) [\sim £10 per tonne CO₂]
- Some private carbon finance for woodland creation [£3-25 per tonne CO₂]

- **Price of woodfuel**
- **Price of timber**
- **Woodland creation**
- agriculture:
 - farm level GHG budgets (particularly livestock sector)
 - links to RDPE, SFP, EWGS etc.
- commercial:
 - as part of CSR & environmental reporting
 - long-term financial investment / carbon markets
- voluntary:
 - charities/NGOs
 - supported by individuals
- development:
 - as part of green infrastructure provision
 - through planning agreements