How the farming sector can reach net carbon zero and what help is needed

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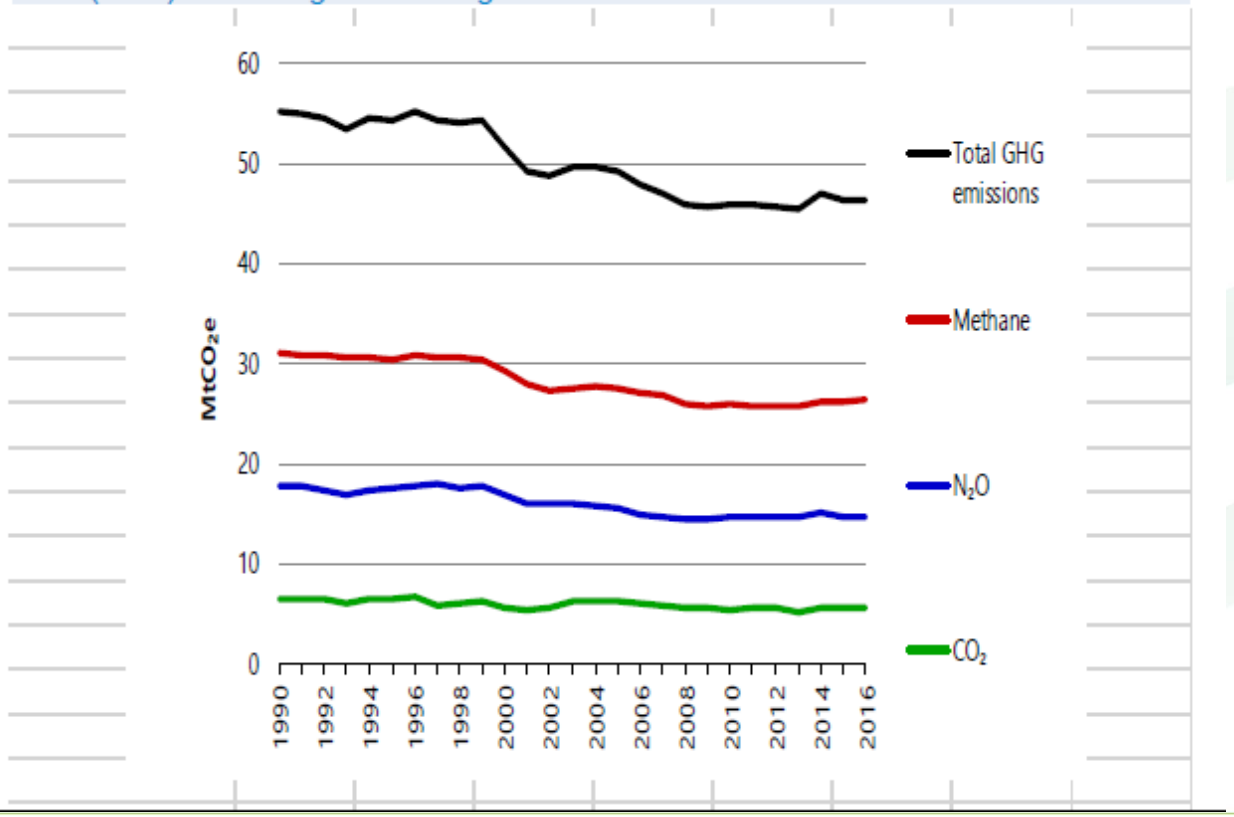
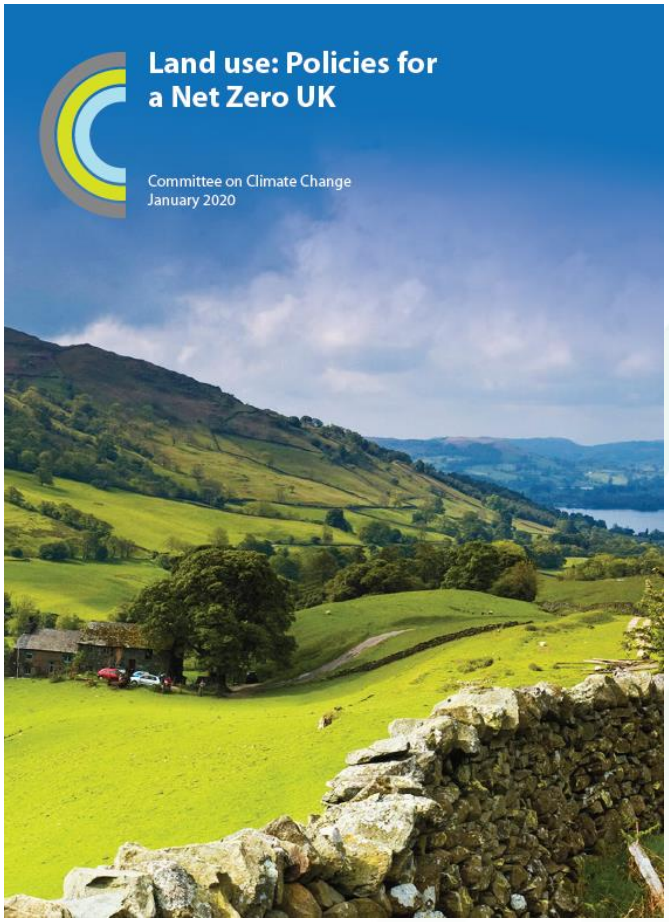
Where we have come from

Agriculture emissions by GHG (1990-2016)

BEIS (2018) Final UK greenhouse gas emissions national statistics 1990-2016



Committee on Climate Change

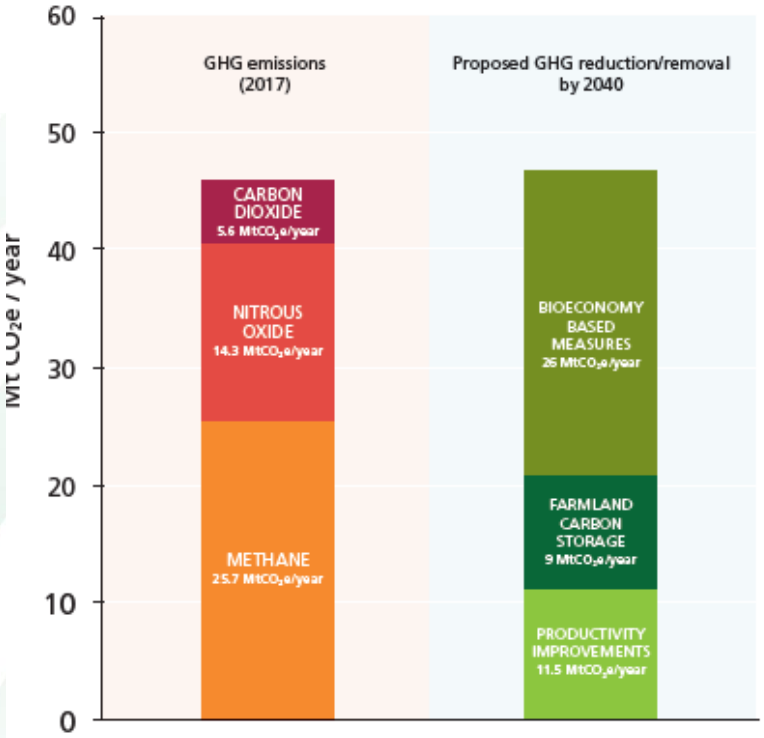


- Increase tree planting
- Encourage low-carbon farming practices
- Restore peatlands
- Encourage bioenergy crops
- Reduce food waste and consumption of the most carbon-intensive foods

‘net zero’ greenhouse gas emissions

- **‘net zero’ GHG emissions by 2040**
- Focus on three key areas:
  - improving farming's productive efficiency
  - targeted measures to increase and manage carbon storage on UK farms
  - boosting production of land-based renewable energy,

NFU report launched



Current (2017) agricultural emissions balanced against potential GHG reduction through productivity measures and GHG removals by various methods

Pillar 1

Boosting productivity and reducing emissions

Estimated GHG savings: **11.5 $MtCO_2e$/year**

Wide variety of measures, from controlled release fertilisers and inhibitors to feed additives, advanced breeding, energy efficiency, on-farm AD

Pillar 2

Farmland carbon storage

Estimated GHG savings: **9 $MtCO_2e$/year**

Enhanced hedgerows, increased tree planting, measures to boost soil organic matter

Pillar 3

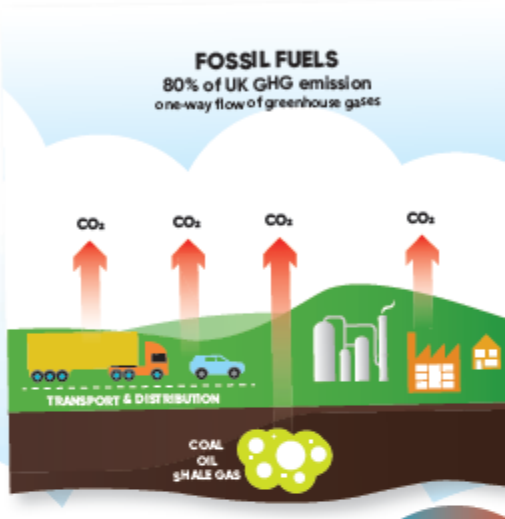
Coupling bioenergy to carbon capture, utilisation and storage

Estimated GHG savings: **Up to 26 $MtCO_2e$/year**

Farm-scale technologies and supply chains, plus bio-based materials, further displacement of fossil fuel emissions by renewables, and novel soil amendments

Why agriculture is part of the solution to climate change

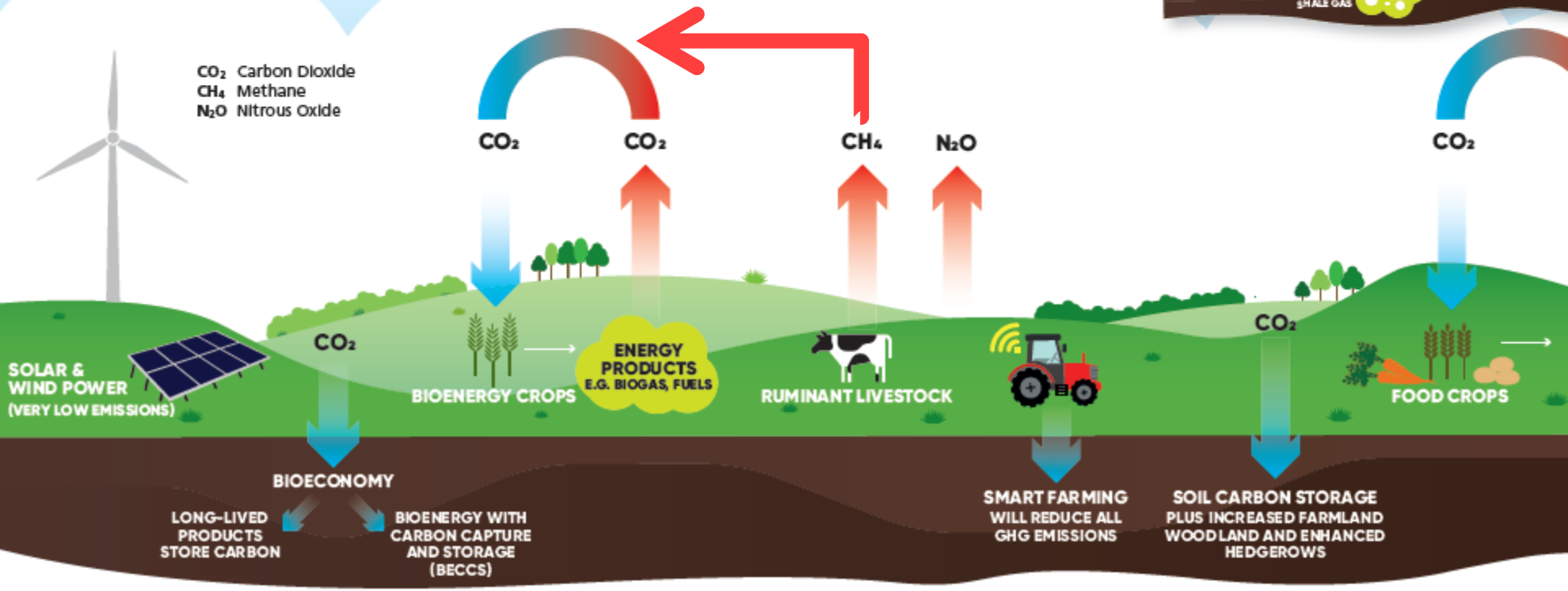
Agriculture, and the land-based economy, can play a key role in tackling climate change. It is uniquely placed to capture the major greenhouse gas – carbon dioxide (CO_2) – from the air and turn it, with the help of farmers, into a wide range of foods, fibres and fuels. By enhancing this ability to capture carbon we can use it to generate "negative emissions" – actively removing CO_2 from the atmosphere and balancing agriculture's emissions of methane (CH_4) and nitrous oxide (N_2O) from food production.



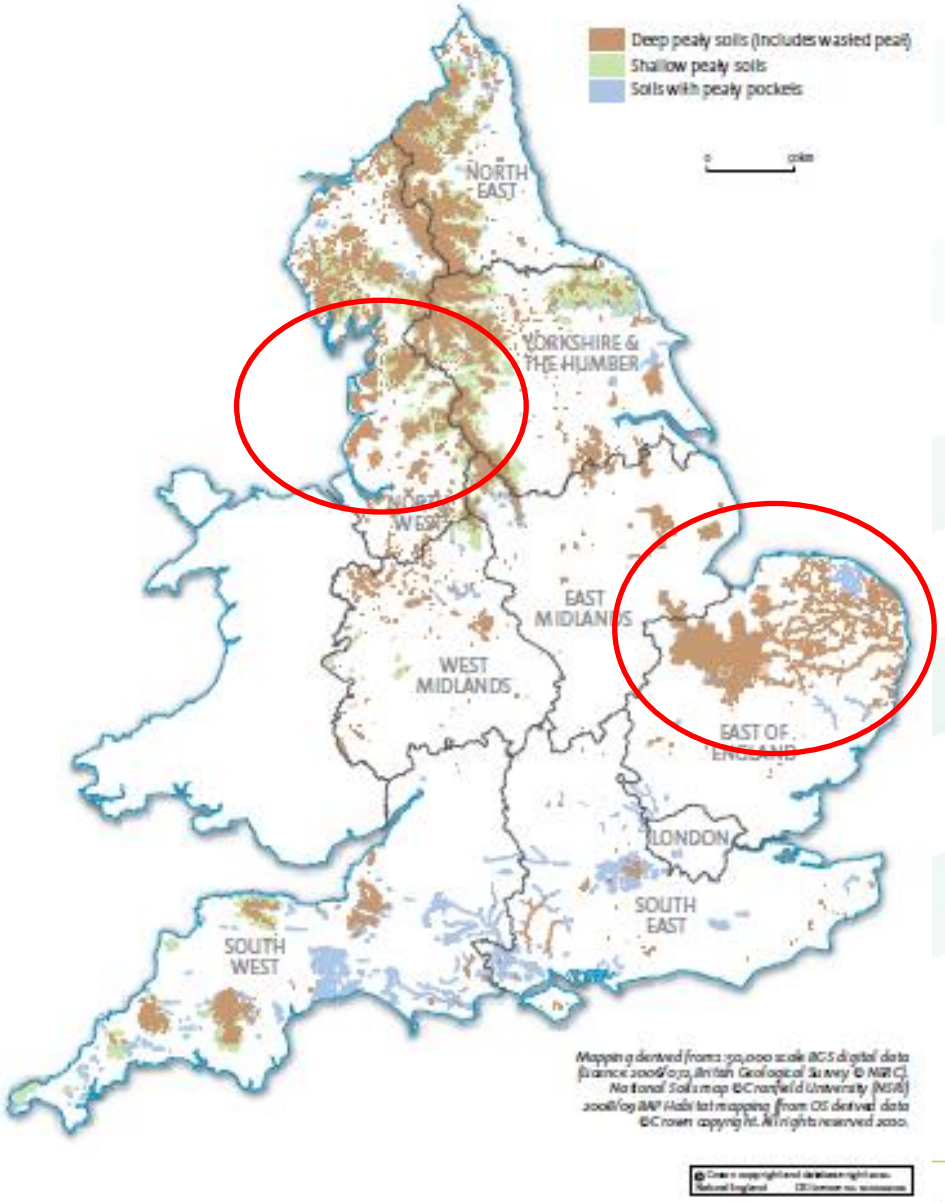
AGRICULTURE

10% of UK GHG emissions

circular, balanced flows of greenhouse gases



Challenge….



Peat…..

- Challenge particularly in the lowlands
  - Fens cover less than 4% of England's farmed area but produce over 7% of the country's total agricultural production

- Technology/techniques to manage and protect peat soils, as well as to optimise their potential for growing
  - Tree planting
  - Cover crops
  - Min/Zero Till
  - Peat Alternatives

- Help?