

# Yorkshire & Humber Planning Seminar

**Gemma Grimes**

**Head of Onshore Renewables  
RenewableUK**

# Today's seminar

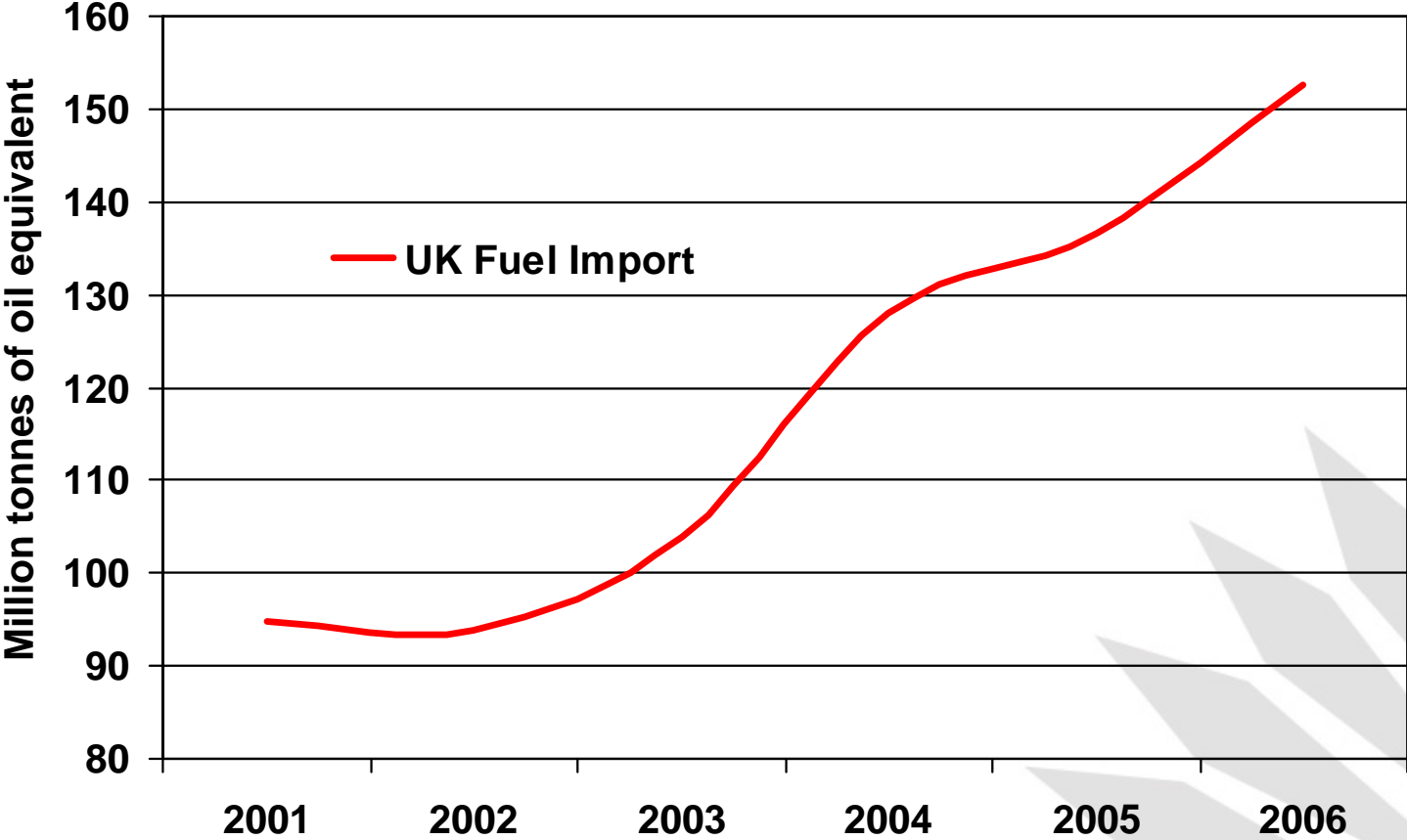
- **Morning**

- General overview – Gemma
- Small wind overview – Ian
- Developer perspective – Nicola
- Regional perspective - Joe

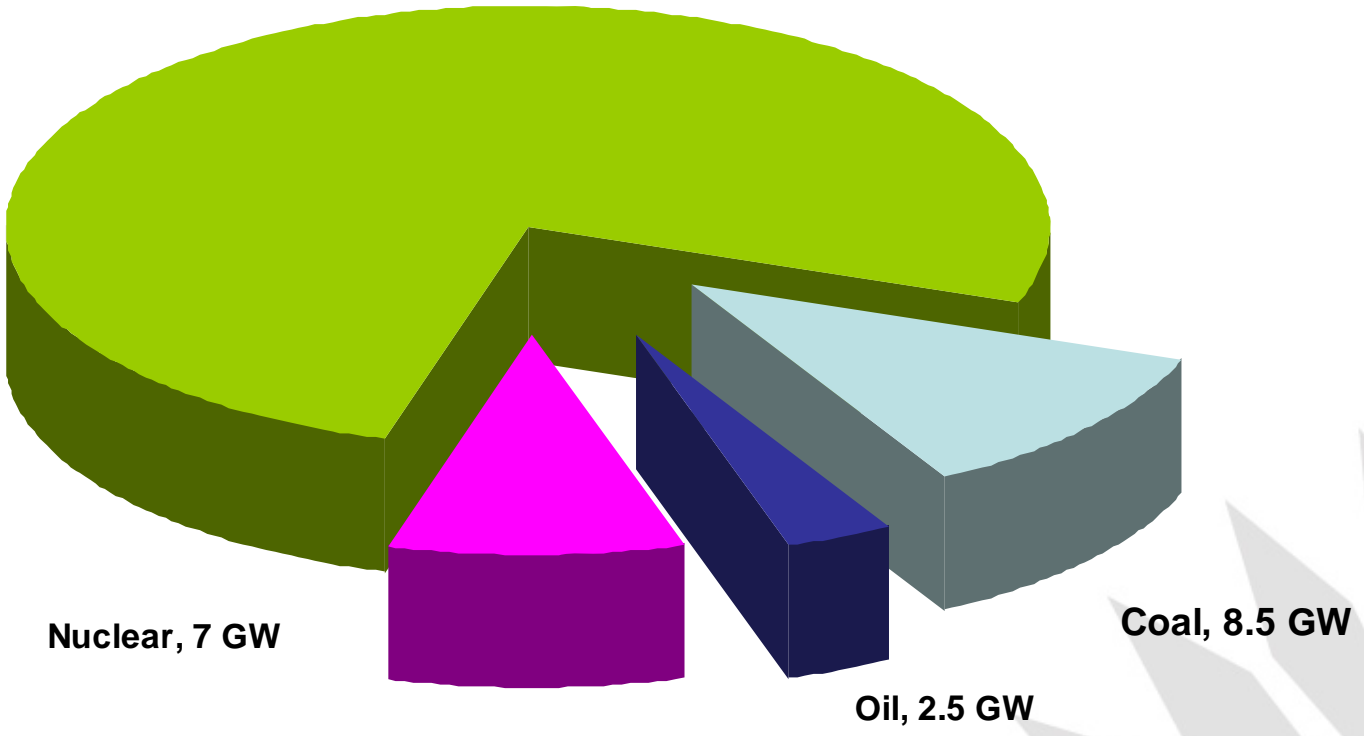
- **Afternoon**

- Panel debate – Christian, Philip, Eddie, Nicola

# Security of Supply

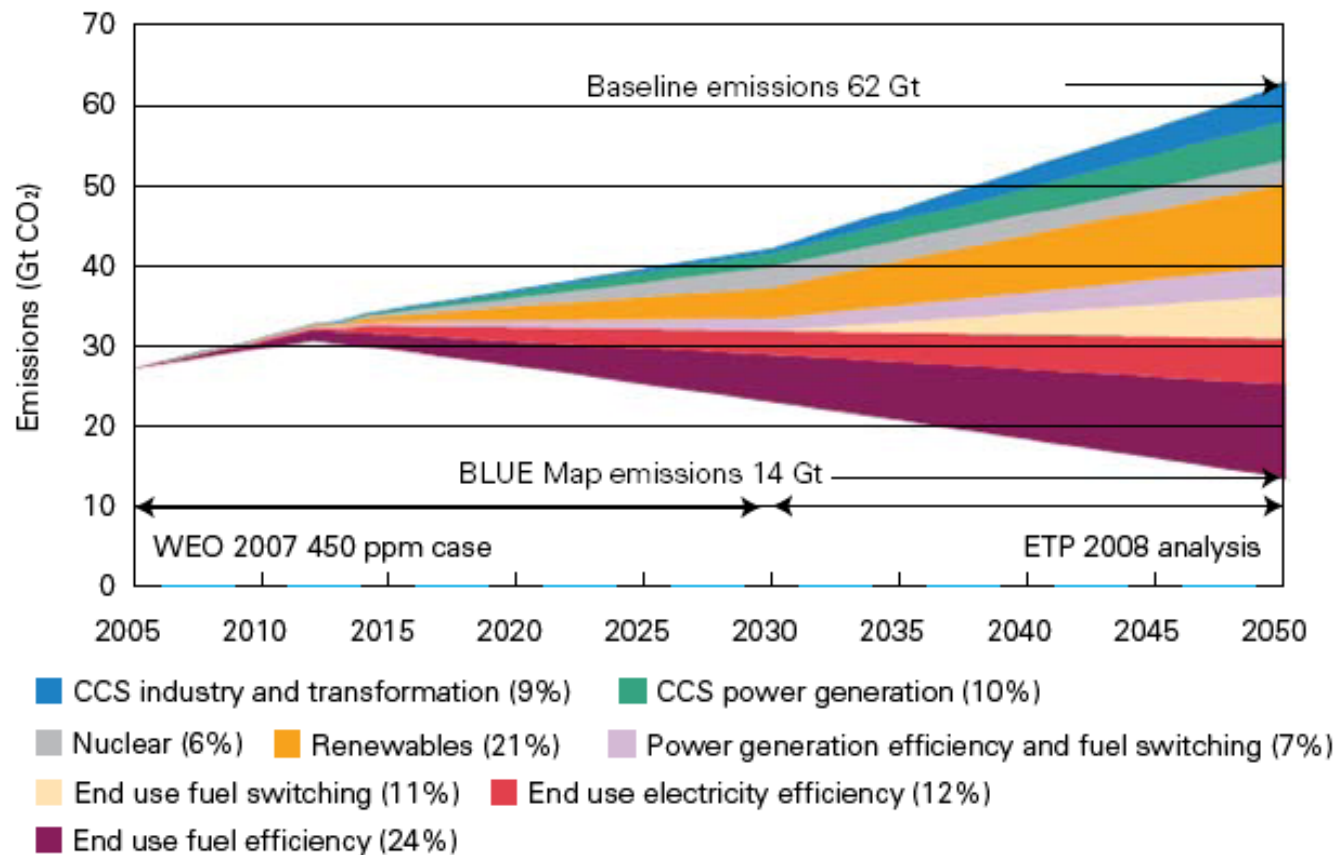


# Energy Gap

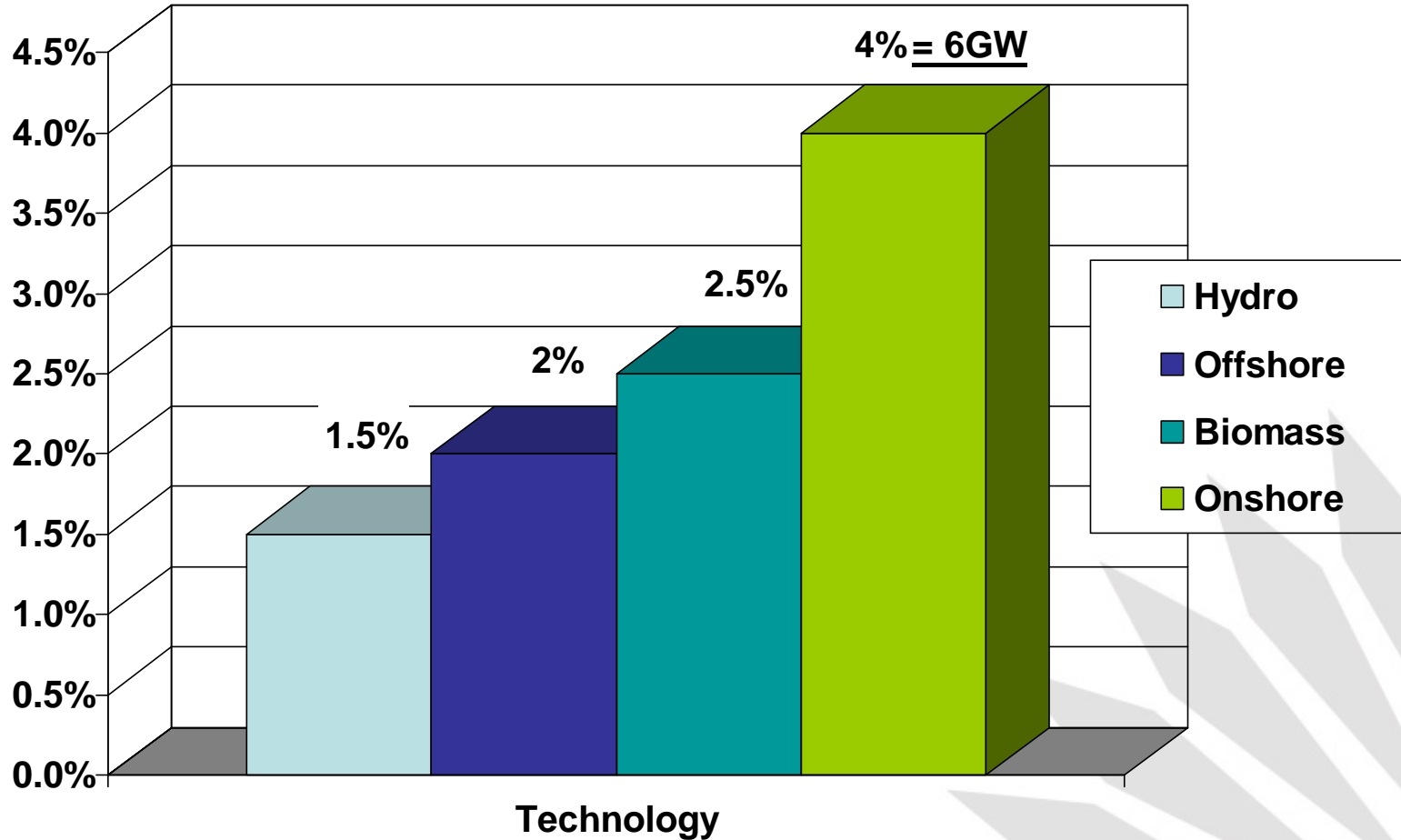


# Carbon Reduction

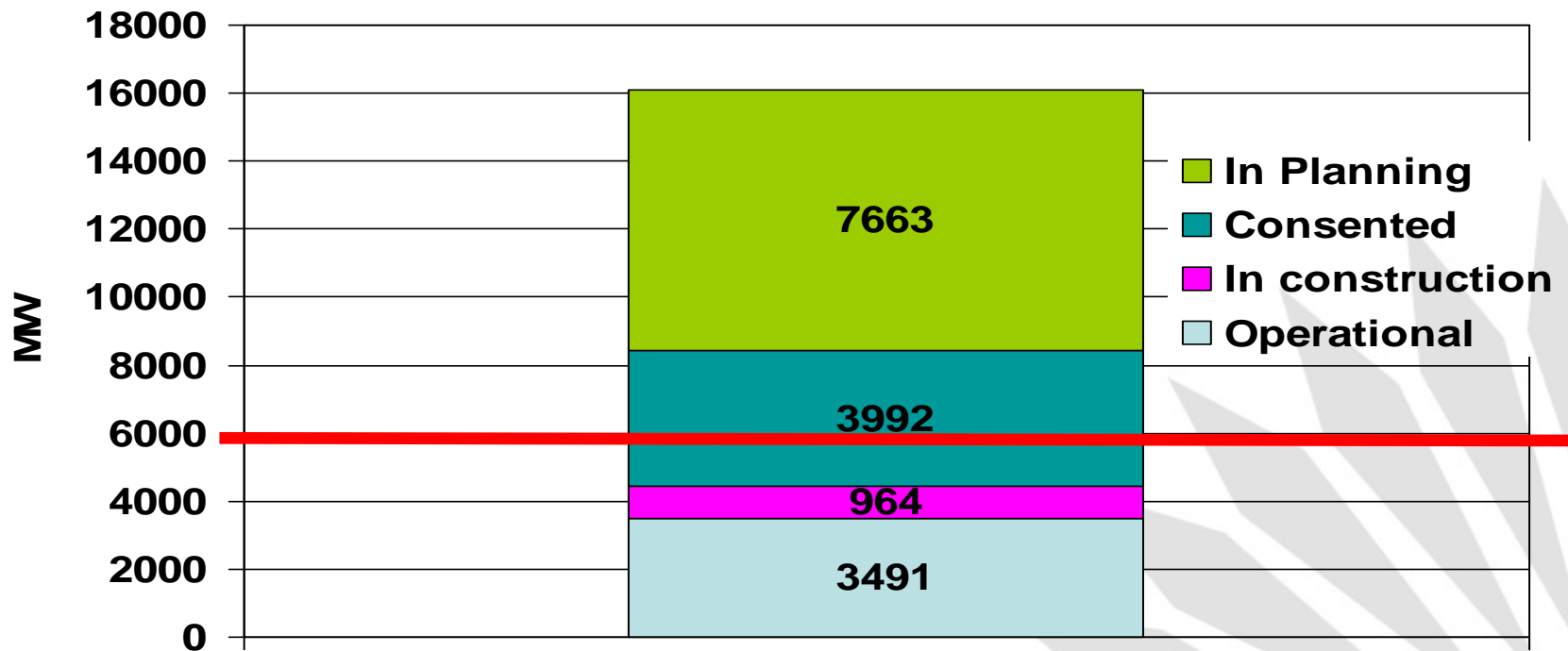
**Chart 1.1:**  
**Contribution of global emission reduction options 2005-2050<sup>7</sup>**



# 10% Renewable Electricity



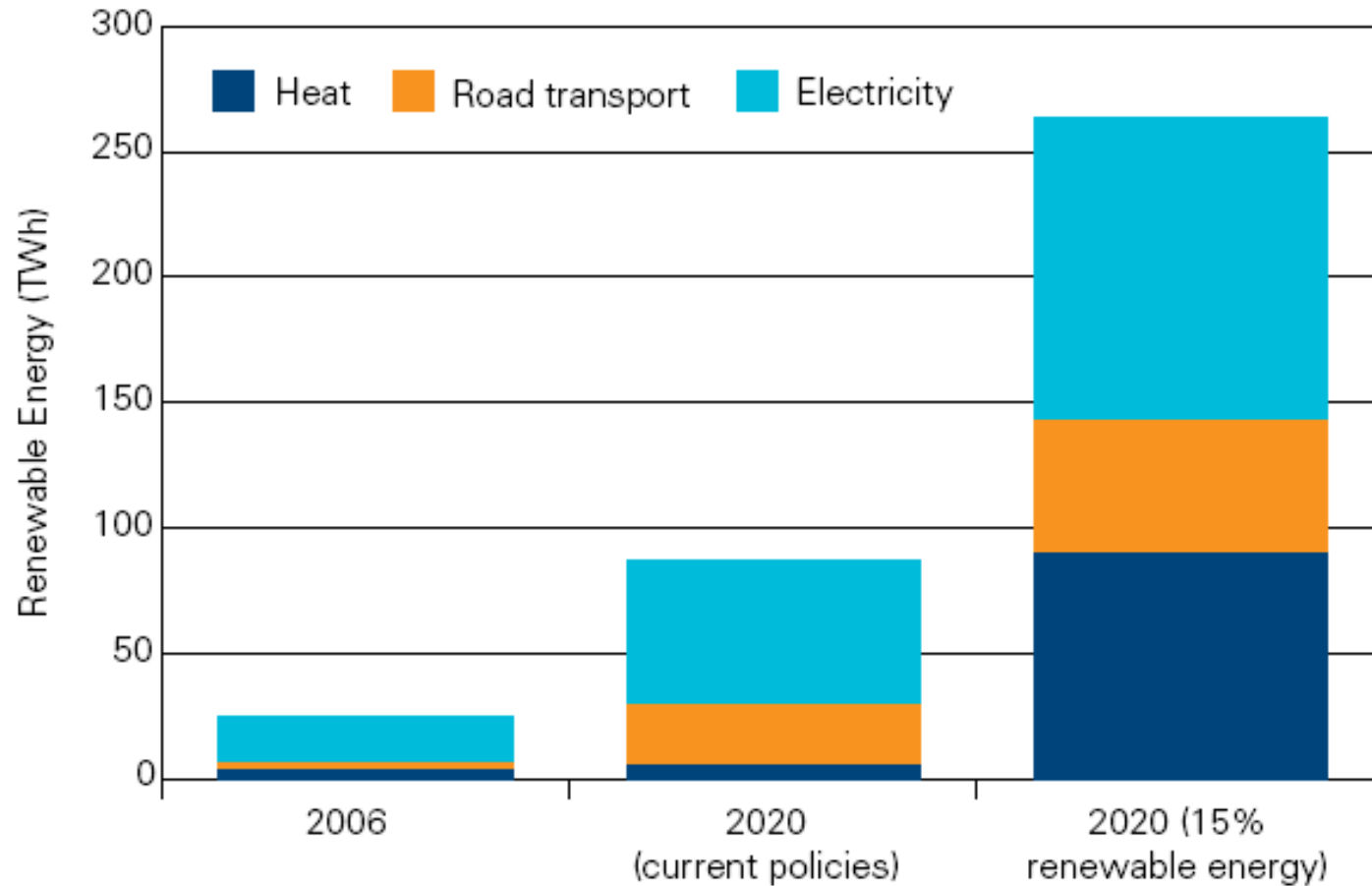
# Progress 6GW



# EU & Government Targets

- **UK 2010: 10% renewable electricity**
- **EU 2020: Renewable Energy Directive/Fuel Quality Directive 2009**
  - 20% of energy across the EU to be renewable
  - 15% of energy in the UK to be renewable
  - 10% of energy used in transport to be renewable
  - a minimum reduction in GHG emissions from road transport of 6%
- **UK 2050: 80%+ reduction**

# 2020: Challenge on a different scale

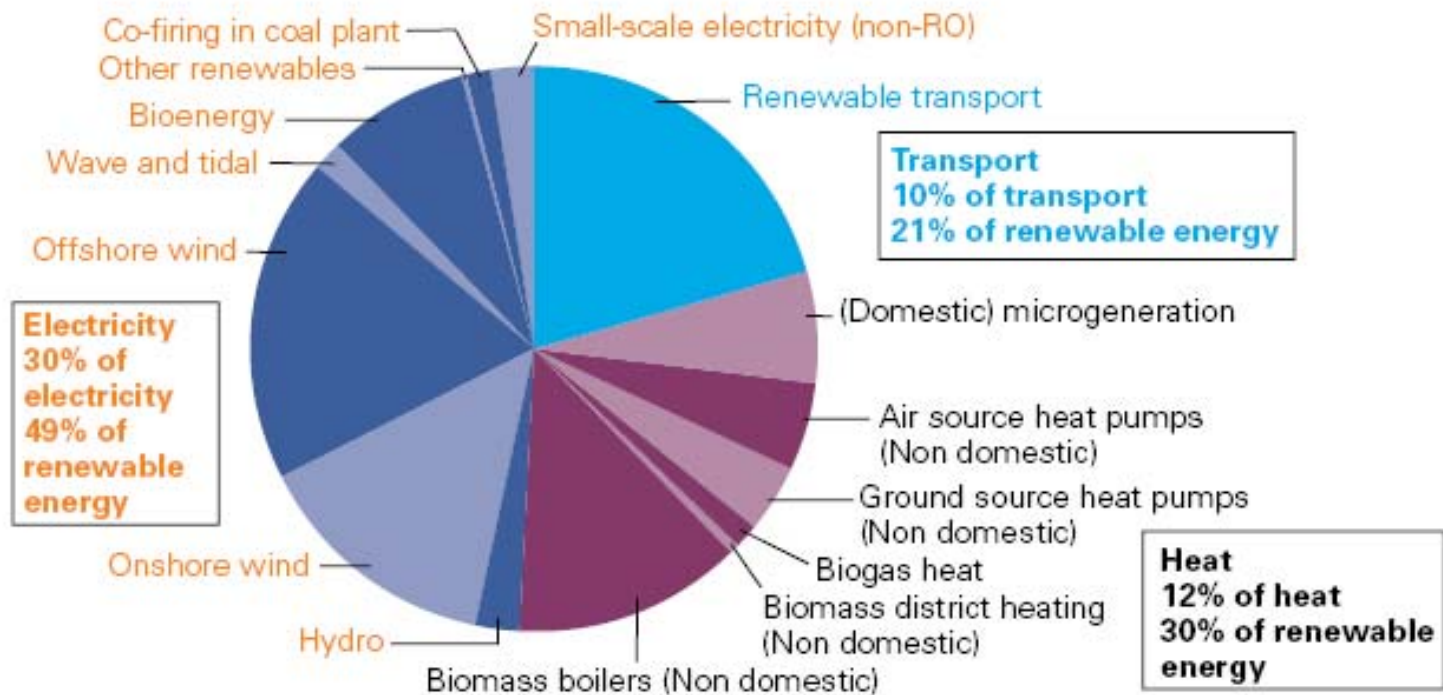


Source: BERR analysis

# 2020: Potential breakdown

Chart 2:

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

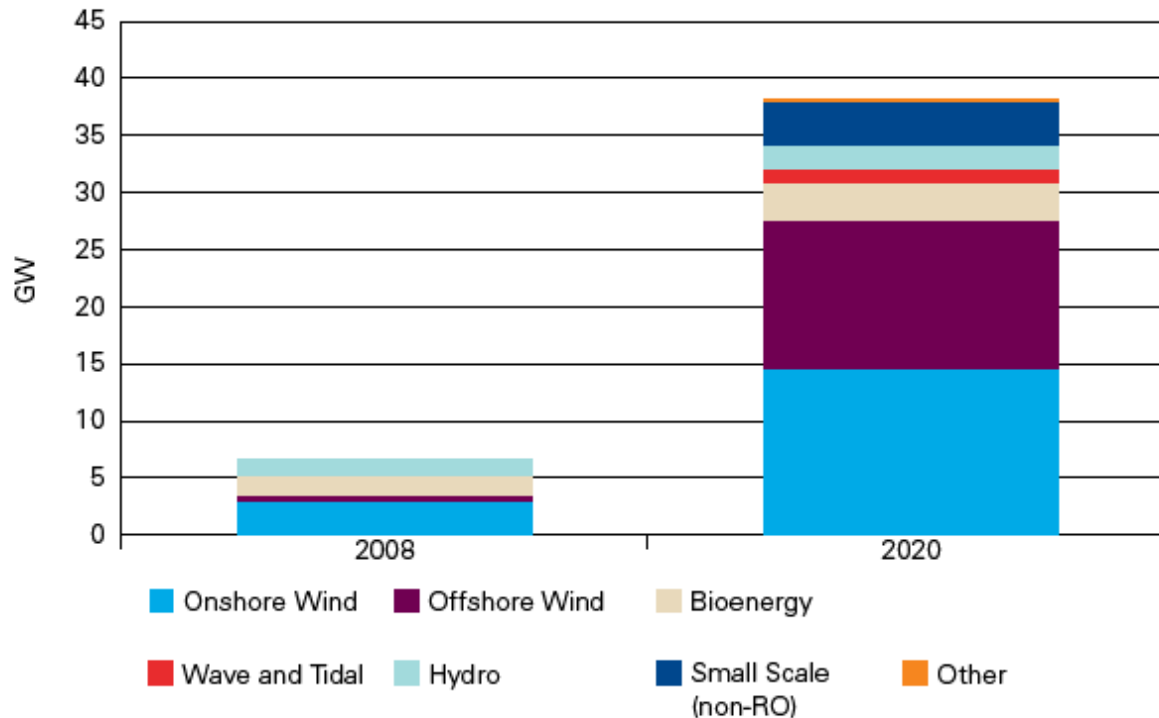


Source: DECC analysis based on Redpoint/Trilemma (2009), Element/Pöyry (2009) and Nera (2009) and DfT internal analysis

# 2020: Breakdown of renewable generation capacity

Chart 2.4:

Renewable electricity technologies – comparison between 2008 and projected to 2020



Source: Energy Trends (June 2009) and DECC analysis based on Redpoint/Trilemma (2009) and Element/Pöry (2009)

Note: Small-scale electricity not separately identified in 2008

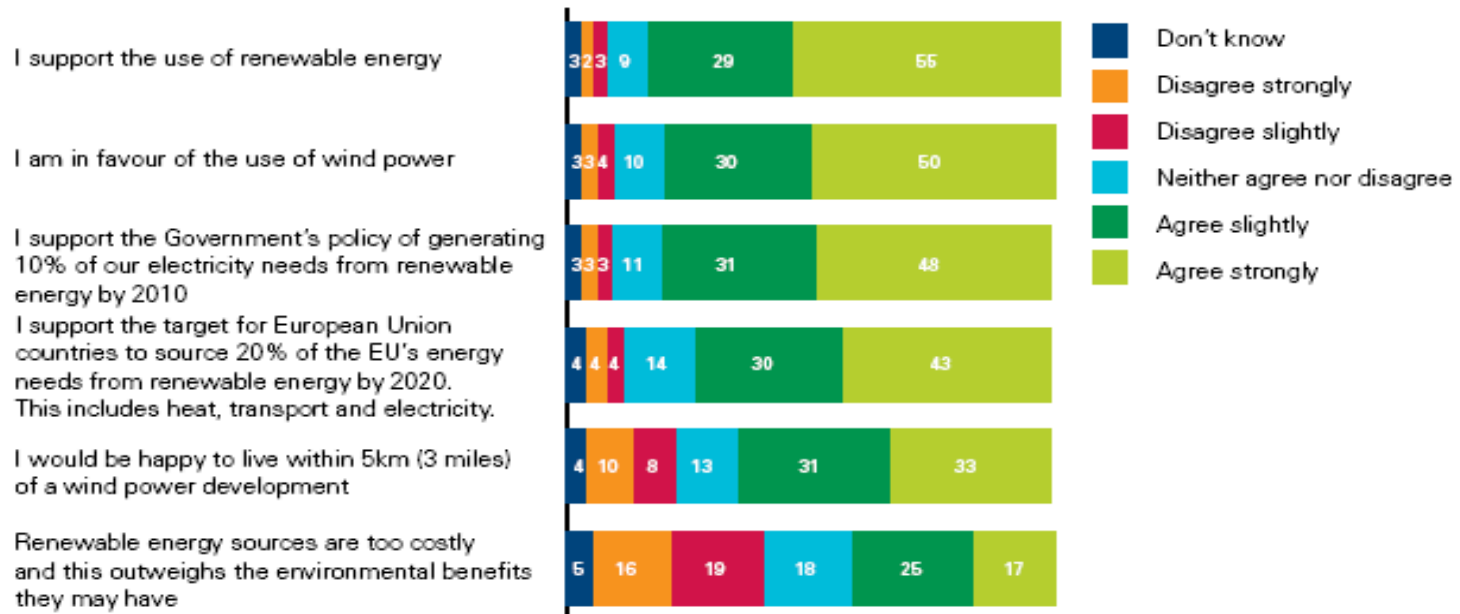
# Economic opportunities for UK

- £60 billion of private investment
- 60,000 UK jobs in manufacturing, operations & maintenance
- Modern turbine 3MW puts £100,000 into local economy every year through maintenance, community payments, rates and rents.



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# Is wind power popular?



Source: BERR Renewable Energy Attitudes Research, May 2008

# Availability

- The percentage of time a wind farm is technically available to produce electricity.
- Like a car wind turbines have to be serviced.
- The availability of a wind farm is between 95%-98%

# Capacity

- The percentage of energy produced compared to the theoretical maximum
- In reality the wind does not blow at full capacity all the time and the turbines have to be maintained
- The average Capacity Factor in the UK is around 30%, therefore on average it generates 30% of its maximum power
- A normal wind farm will produce electricity for 80% of the year.

# Efficiency

- Energy output (electricity) expressed as a percentage of the energy input (wind)
- As the energy in (wind) is free, non polluting and will never run out, efficiency is irrelevant and not a good performance measure for wind power
- This is extremely important for a fuel based conventional power station such as coal which may burn **20,000 tonnes** of coal each day and have an efficiency of around 37 %