

East of England Planning Seminar

Gemma Grimes

**Head of Onshore Renewables
RenewableUK**

Today's seminar

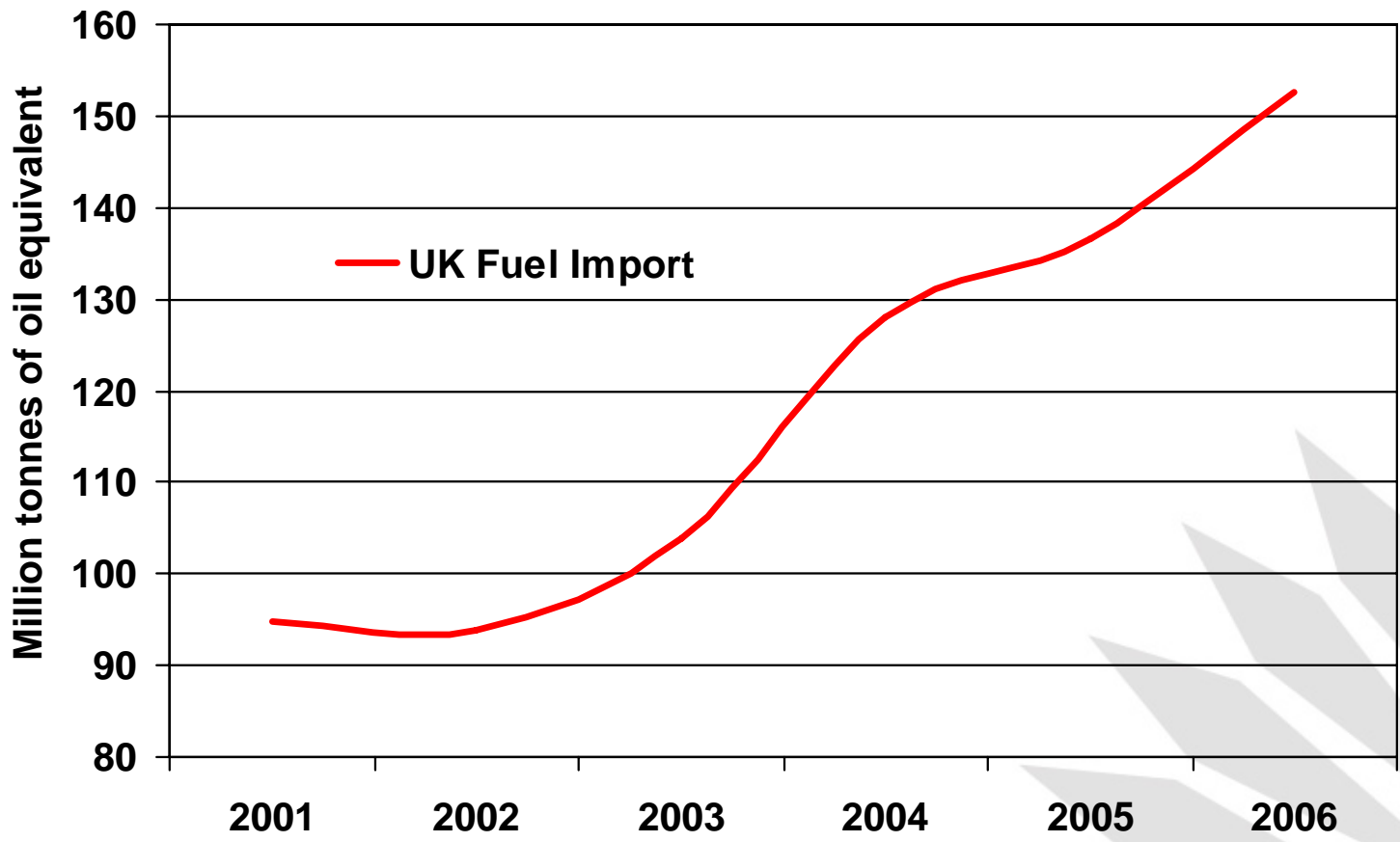
- **Morning**

- Overview – Gemma
- Regional perspective – James
- Developer perspective – Debbie
- Small wind overview – Ian

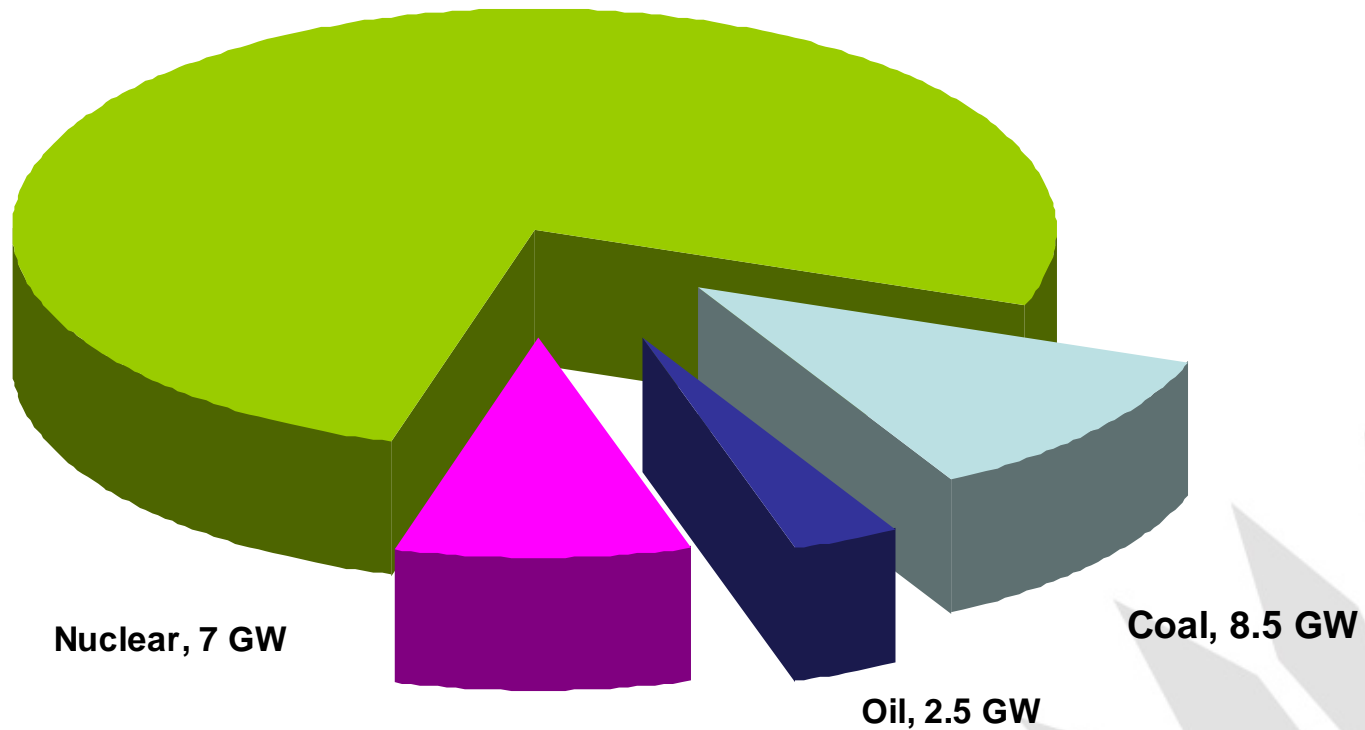
- **Afternoon**

- Panel debate

Security of Supply

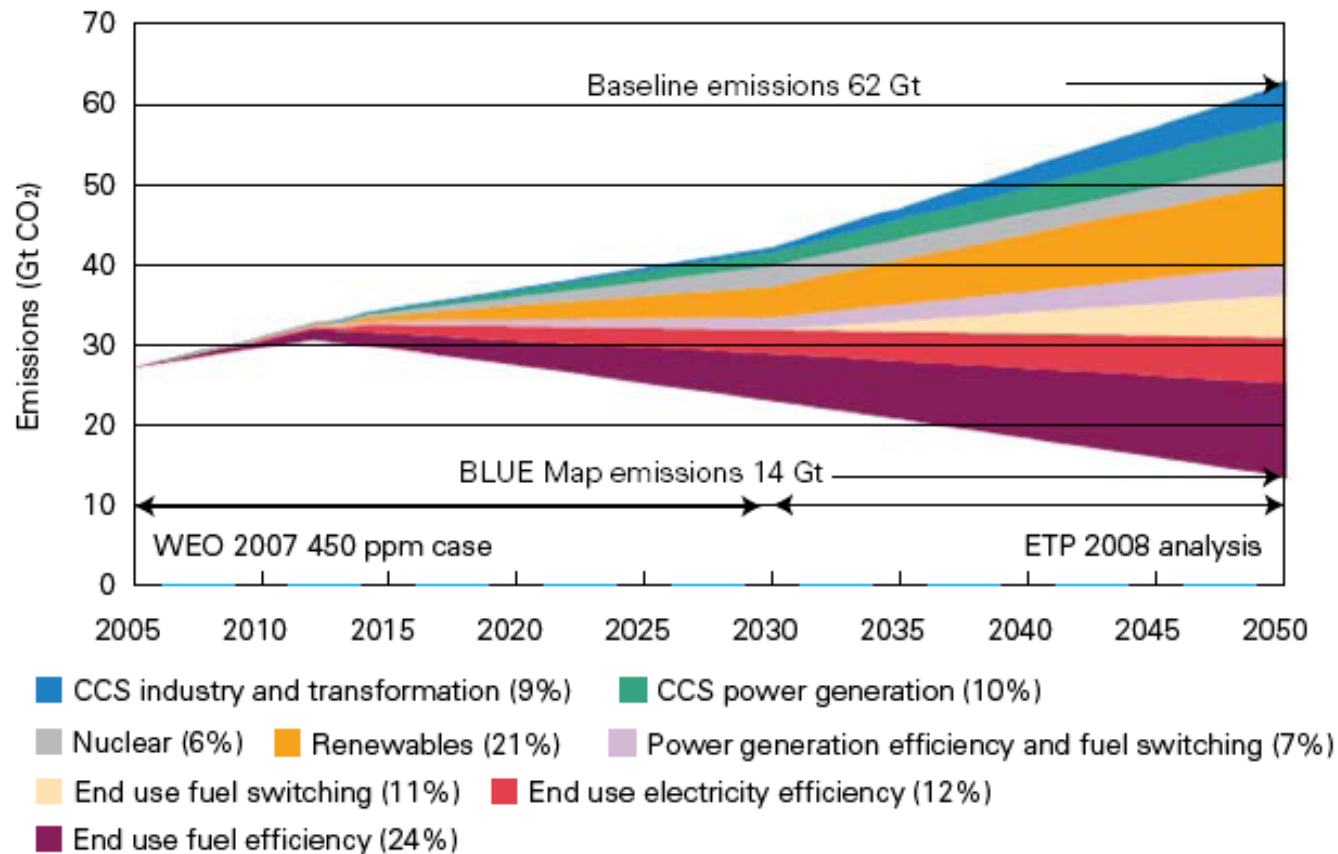


Energy Gap



Carbon Reduction

Chart 1.1:
Contribution of global emission reduction options 2005-2050⁷



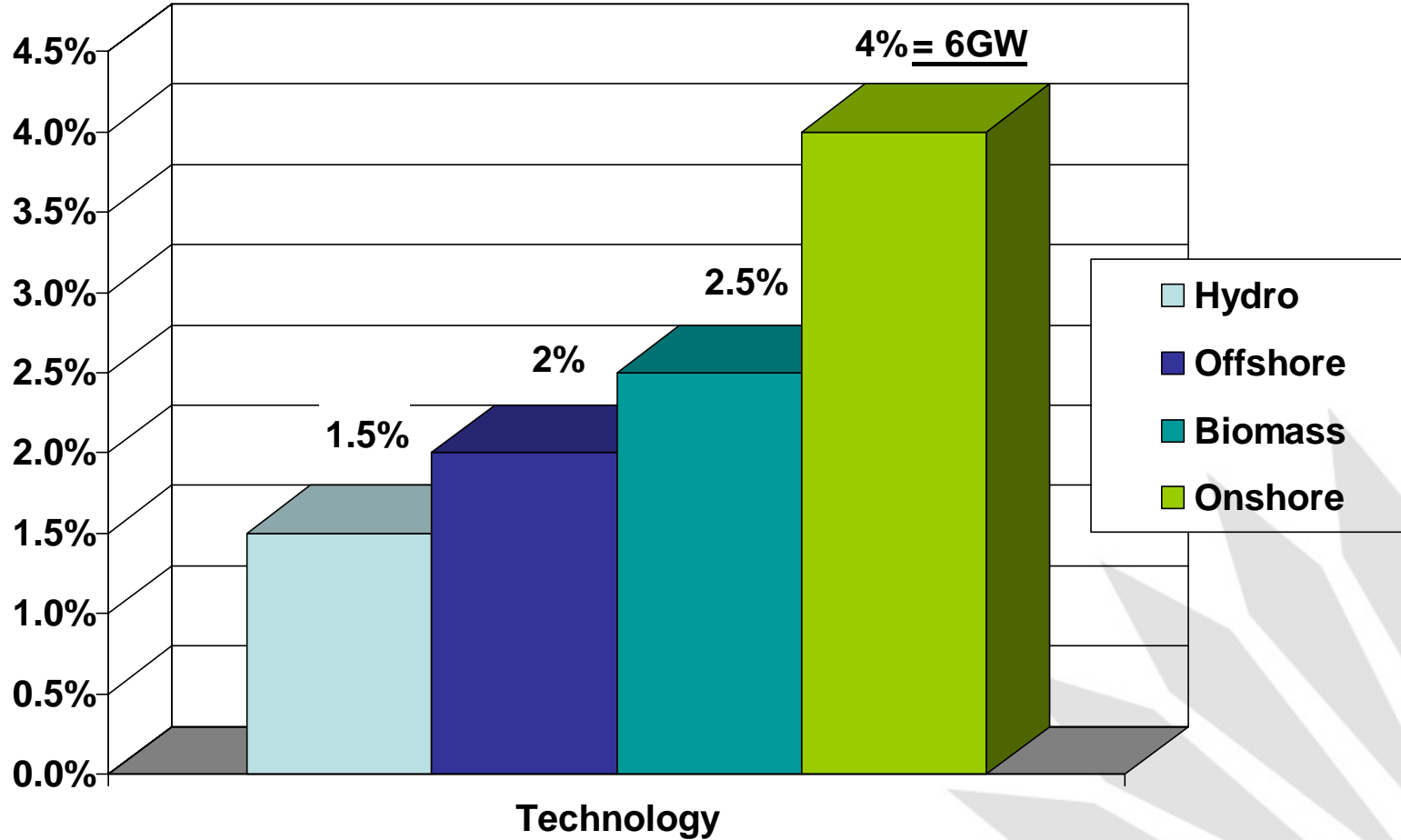
EU & Government Targets

- **UK 2010:** 10% reduction & 10% renewable energy
- **EU 2020:** 20/20/20 reduction

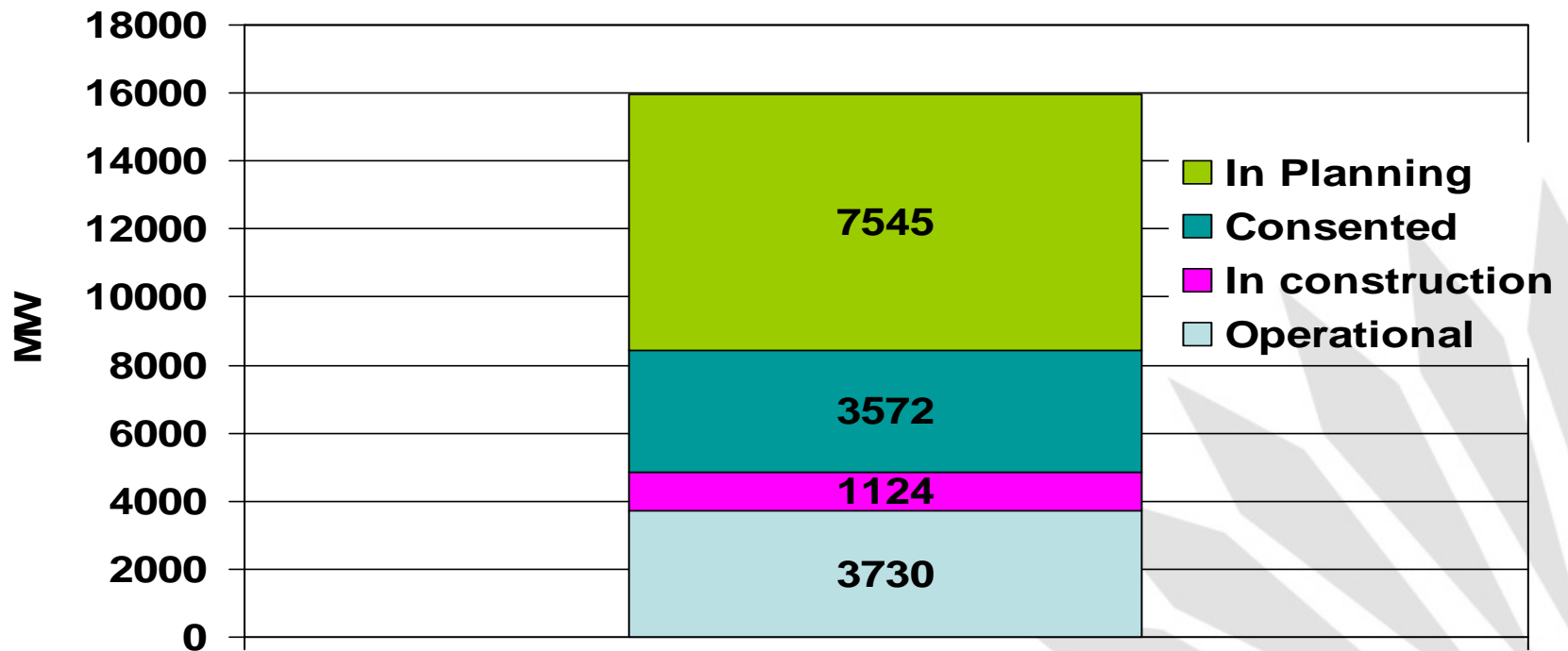
Renewable Energy Directive/Fuel Quality Directive 2009

- The Renewable Energy Directive (RED) imposes stretching renewables targets for 2020 across the EU.
- Targets in the Renewable Energy Directive and Fuel Quality Directive (FQD) require by 2020:
 - 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

10% Renewable Electricity



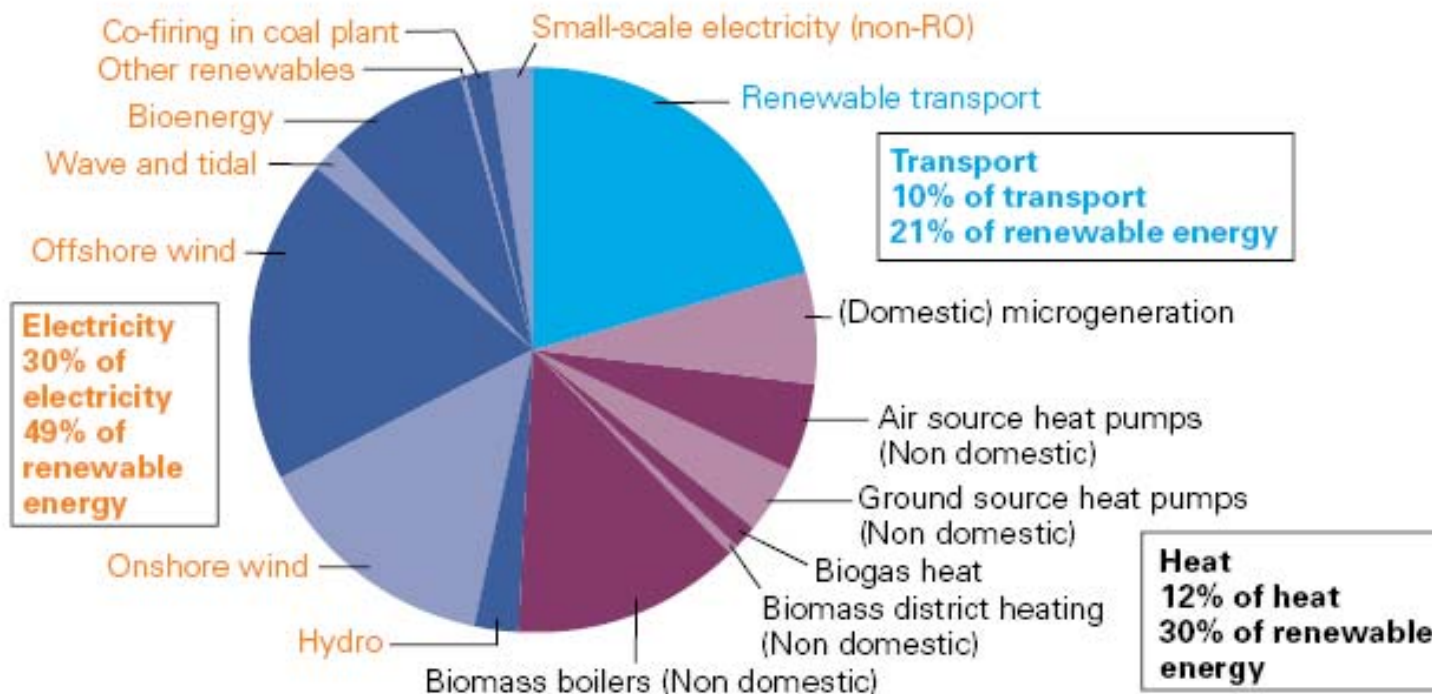
Progress 6GW



2020: Renewable Energy

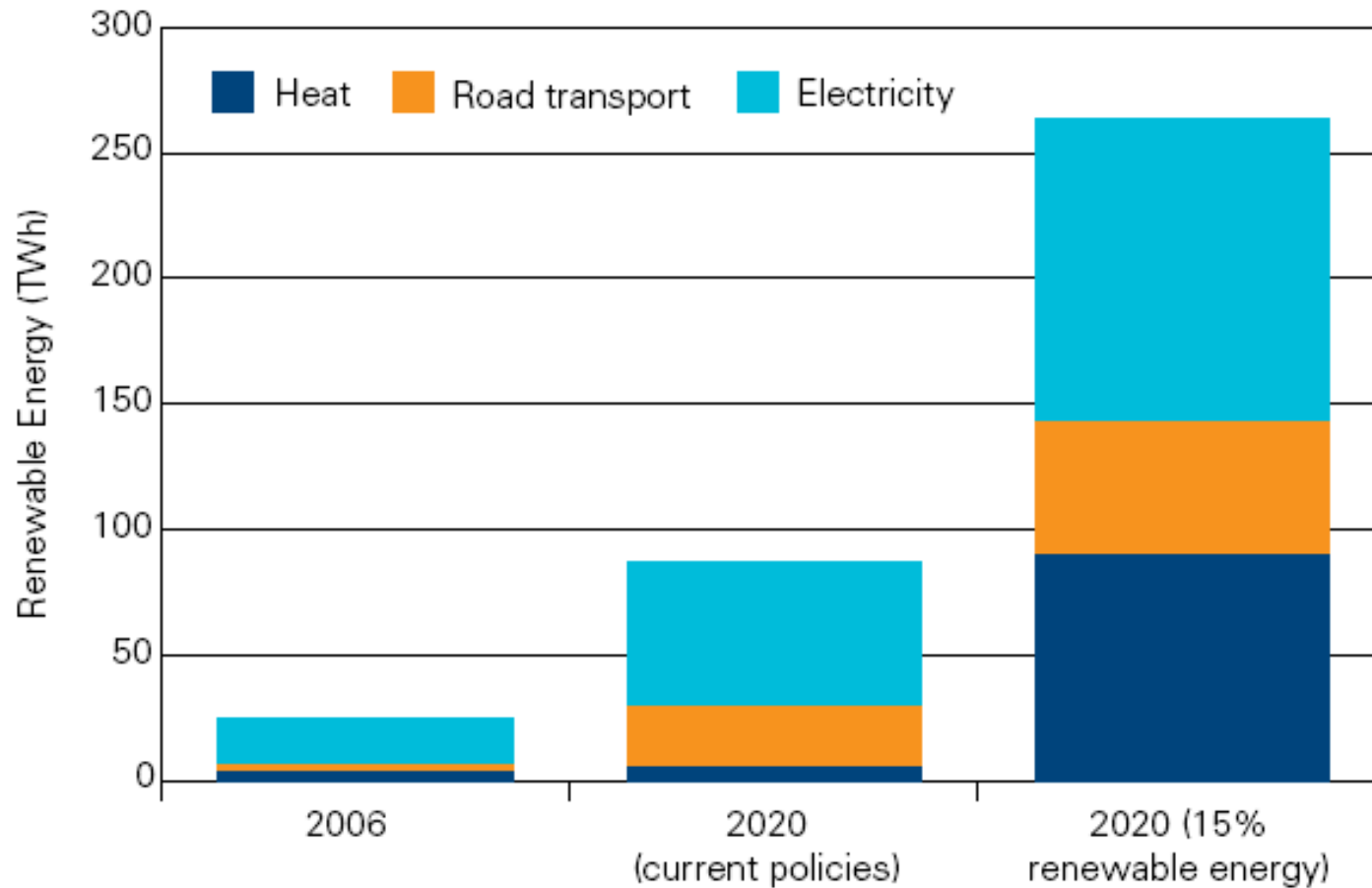
Chart 2:

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

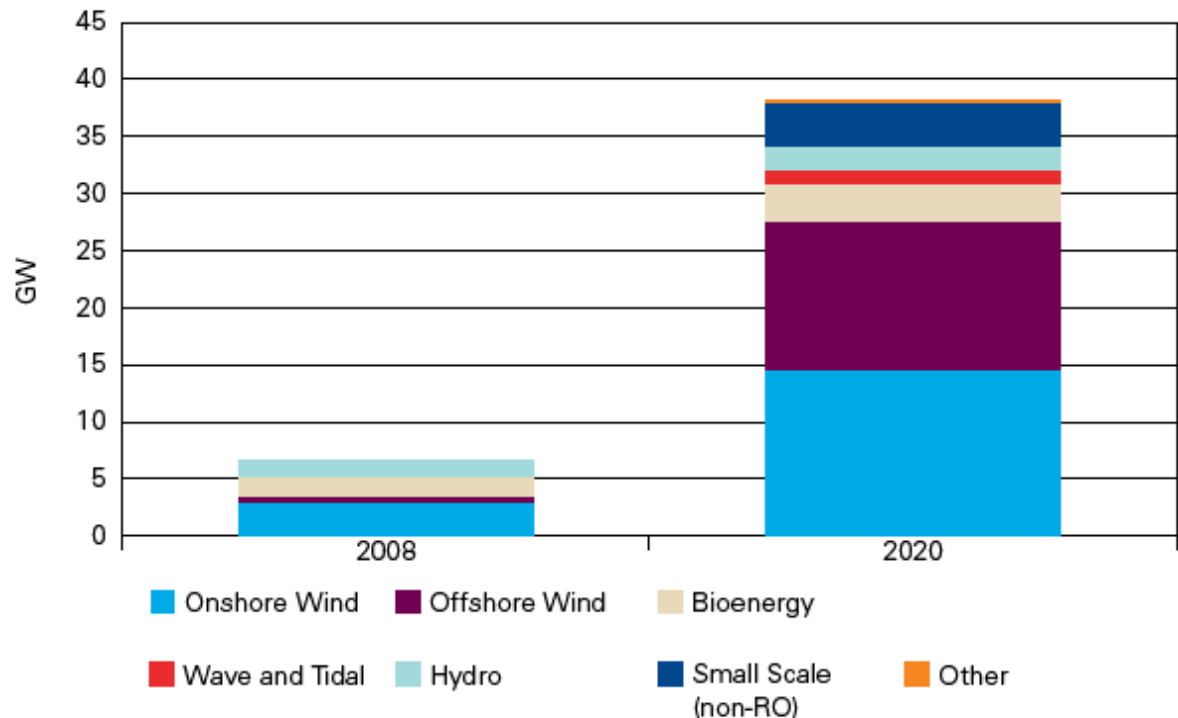
2020: Renewable Energy 2



Source: BERR analysis

2020: Renewable Electricity

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/Pöyry (2009)

Note: Small-scale electricity not separately identified in 2008

2020: Summary

- 15% of all energy from renewables (EU target)
- Renewable heat & transport starting at low base
- 35 - 40% renewable electricity by 2020
- Wind energy needs to deliver the lions share

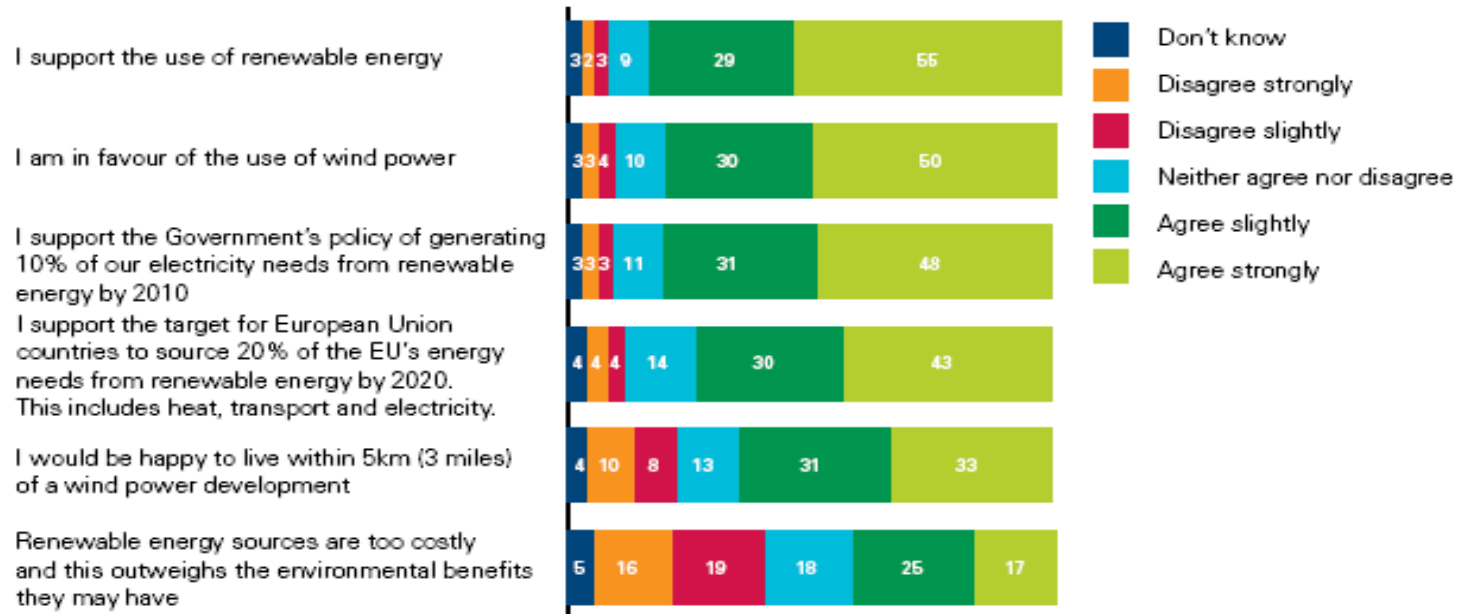
Economic opportunities for UK

- £60 billion of private investment
- 60-70 thousand UK jobs in manufacturing, operations & maintenance
- A modern turbine will put £100,000 into local economy every year through maintenance, community payments, rates and rents.



Gemma Grimes
Head of Onshore Renewables
RenewableUK
g.grimes@renewable-uk.com
0207 901 3023

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 %

If we don't grab this challenge.

- **10 years ago China had < 2% of Solar Panel Market.**
- **Today China has 46% of World Solar Panel Market**
- **How do we develop strategies and partnerships to realise this opportunity for the region.?**