



# Ensuring the delivery of secure low carbon energy

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# Overview

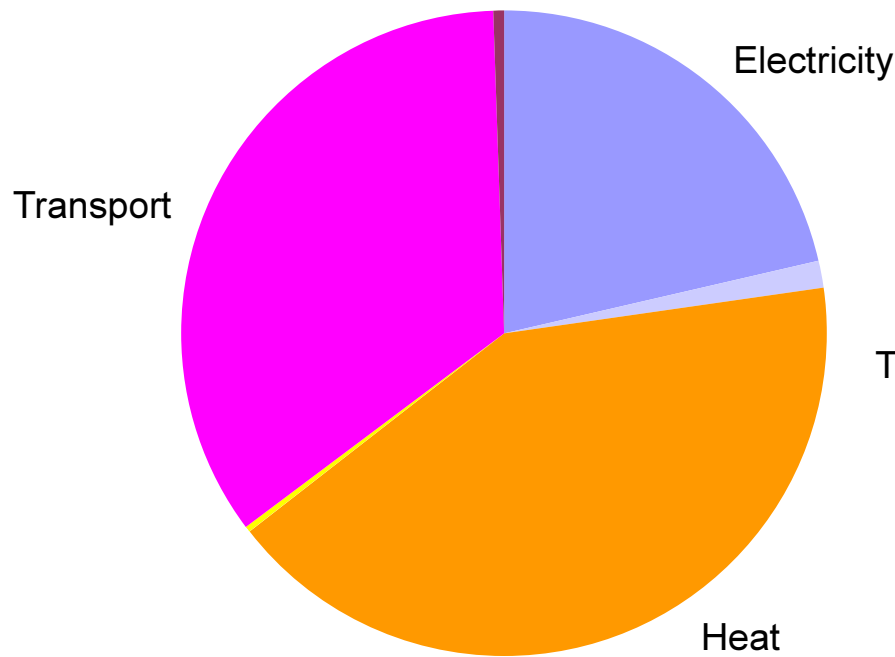
- Sustainable energy goals
- Low carbon investments (including renewables, electricity, gas, heat, networks & energy efficiency)
- Challenges for the industry
- Role for local government
- Joint working

# Sustainable energy goals

- Secure supply – renewal of existing ageing energy infrastructure
- Low carbon – decarbonisation of electricity and heat to meet the UK carbon budgets and target of 80% reduction in carbon by 2050
- Renewable – meeting the EU target of 20% renewable energy by 2020, with a UK target of 15%
- Affordable – ensuring energy is affordable and supporting fuel poor and vulnerable groups

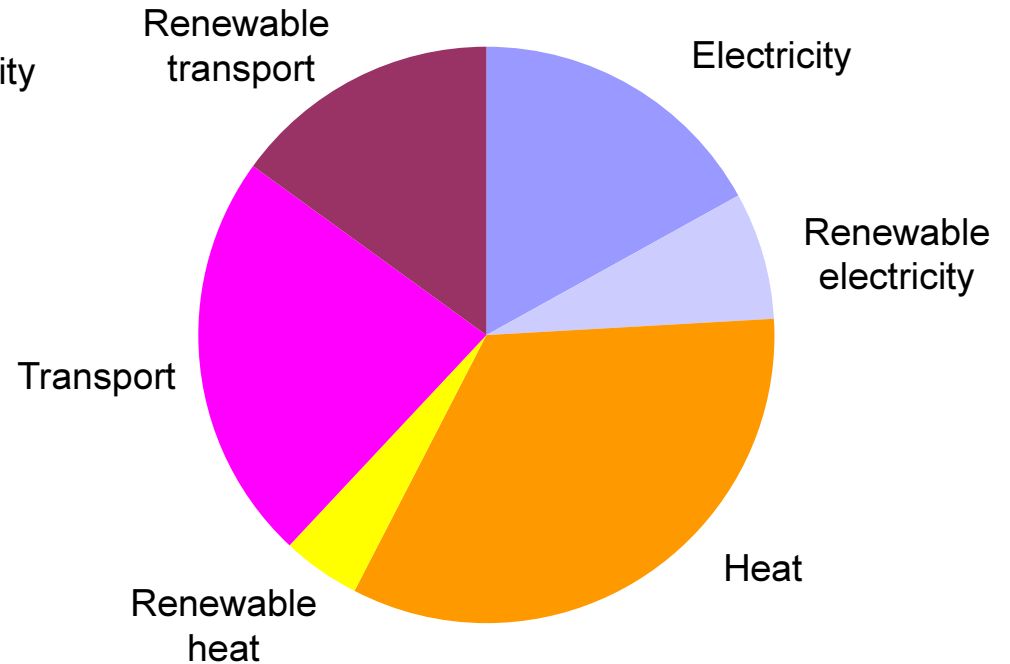
# Low carbon investments: renewables

2008



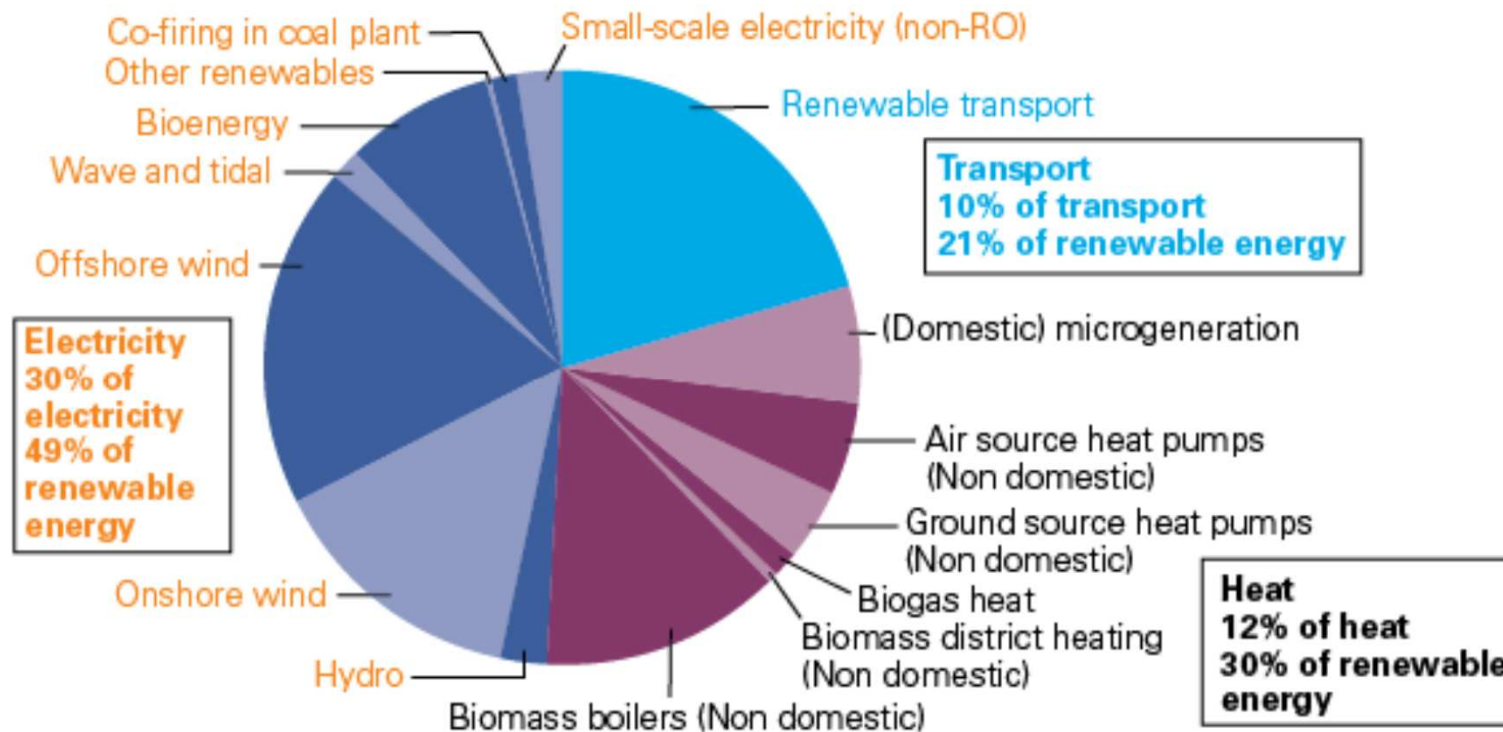
Total: 1695 TWh  
Renewable: 2%

2020



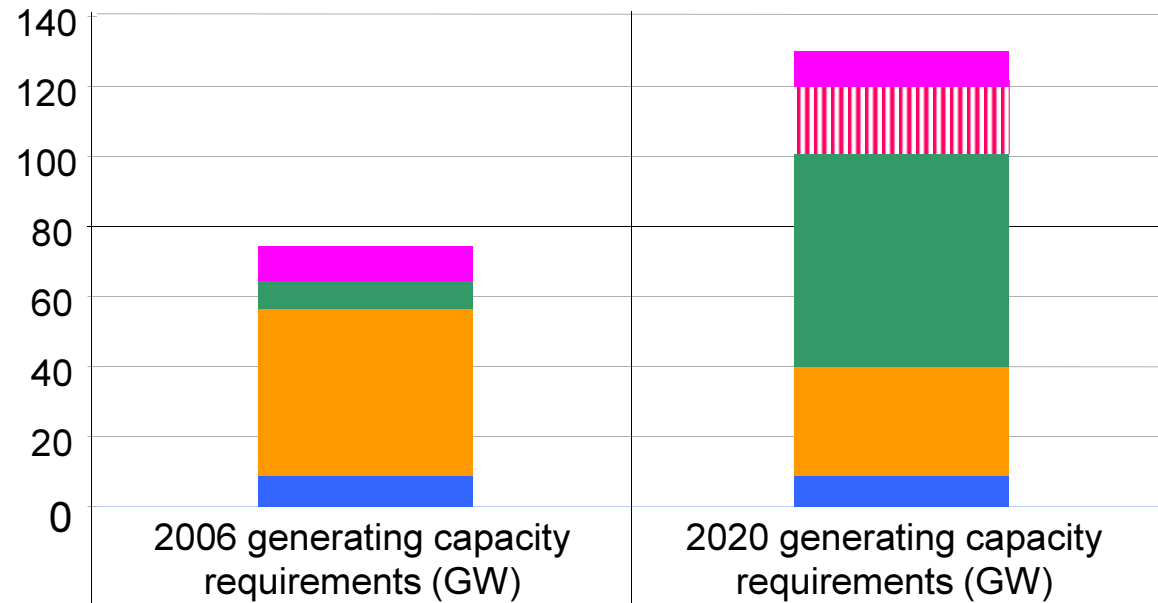
DECC's lead scenario  
Total: 1590 TWh  
Renewable: 27%

# Low carbon investment: renewables - mix



DECC's lead scenario for 2020

# Low carbon investments: renewables - back up requirements



■ Plant margin	10	10
▨ Renewables back-up		17
■ Renewables	5	55
■ Thermal	48	31
■ Nuclear	9	9
<b>TOTAL</b>	<b>72*</b>	<b>122</b>

\*76 GW installed in the UK currently

## Low carbon investments: electricity – conventional generation

- Nuclear power – 7GW nuclear power stations due to close by 2018, first new nuclear likely to come into operation in ~ 2018
- Coal-fired – 12GW oil and coal power stations to close by 2015 to meet large combustion plant directive (LCPD), up to four carbon capture & storage demonstration projects planned
- Gas-fired – 5GW currently under construction

# Low carbon investments: electricity

- New renewable generation required  
+
- New back-up capacity required  
+
- Plant closures  
=
- **Around 68 GW of new generating capacity by 2020**

**Current total installed capacity in UK is 76 GW**



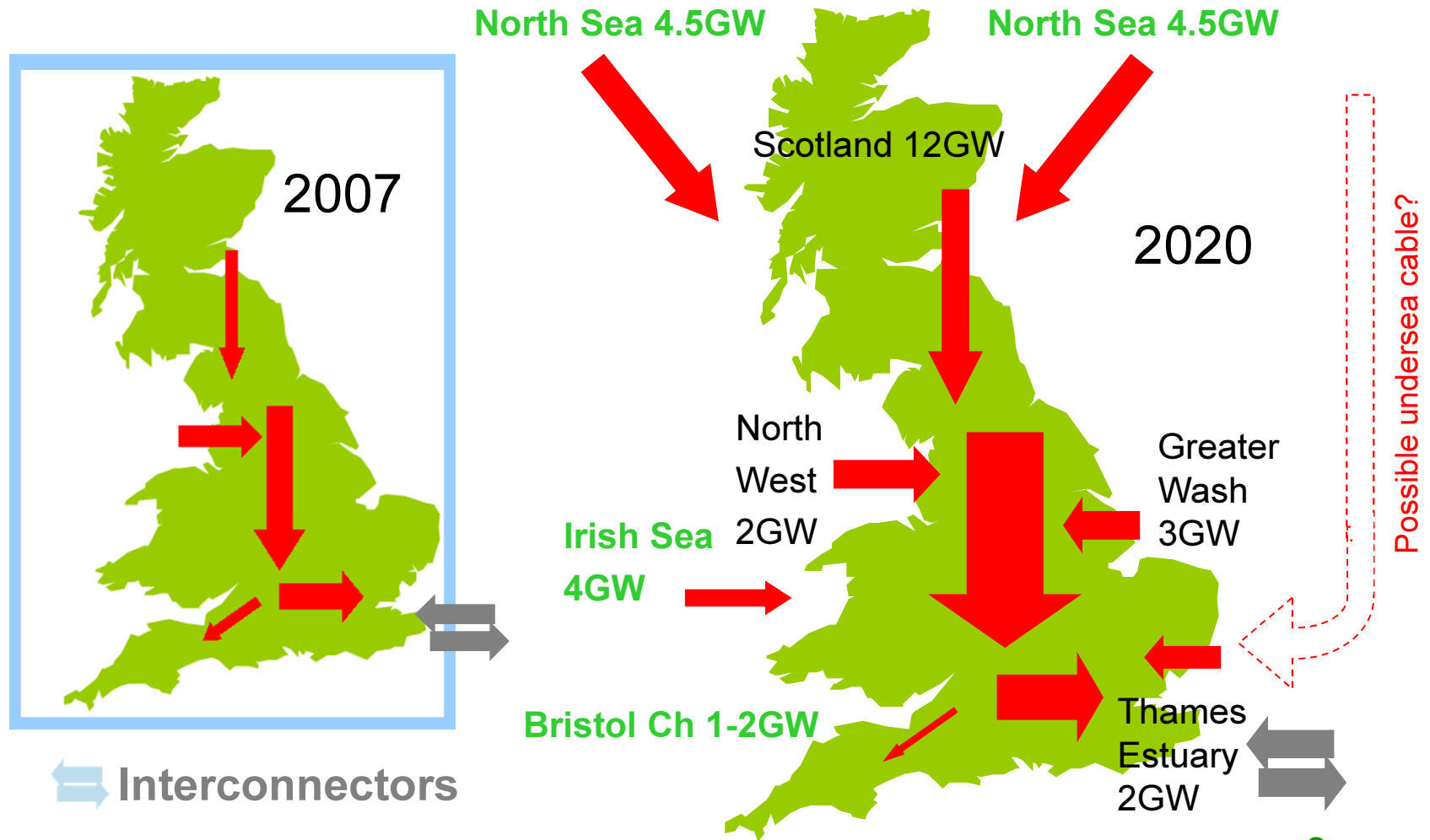
# Low carbon investments: gas & heat

- Biogas – biogas could meet a significant proportion of UK residential gas demand
- Combined heat & power – ranging from domestic to large scale CHP
- District heating – exemplars in Sheffield, Southampton, Birmingham and parts of London

# Low carbon investments: networks

- Electricity – connection of new capacity, including offshore renewables, and the potential for smart grids
- Gas – already extensive gas distribution network across the UK
- Heat – community scale heat networks
- Carbon – e.g. depositing captured carbon

# Low carbon investments: networks



# Low carbon investments: energy efficiency

- Zero carbon new buildings – high energy efficiency standards and onsite renewables
- Retrofit existing buildings – delivering energy saving measures to consumers
- Product standards – developing more efficient appliances such as boilers
- Smarter demand – rolling out smart meters, energy saving tariffs and demand side management

# Challenges for the industry

- Clear policy framework – the current policy landscape is complex, a more strategic approach to intervention is needed, as well as ensuring various policies work effectively together
- Strong price signals – need a stable and sufficient carbon price to encourage low carbon investments, also need to ensure enough back-up capacity
- Planning reforms – obtaining planning consents in a timely manner is critical
- Consumer engagement – consumer buy-in needed to retrofit existing stock

# Role of local government

- Leading by example – showing leadership through the progressive decarbonisation of the public estate and demonstrating technologies in everyday settings
- Planning consents – smaller projects covered by local planning process, also input to the Infrastructure Planning Commission (IPC) process
- Community energy projects – maximising the opportunities for new community scale energy projects in mixed developments via spatial planning
- Retrofit of existing buildings – working in partnership with energy companies and others to ensure delivery of energy saving measures which meet local needs and opportunities

# Joint working

- Retrofits – exploring how partnerships work in practice for delivery of energy efficiency and community scale energy solutions
- Planning – developing joint guidance for local authorities with information on different low carbon technologies and best practice for pre-application consultation



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