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Geothermal Energy in the UK

UK policy on Renewable Heat

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Objectives for today

- Set out the ‘big picture’ on Government policy on heat and renewable heat, focusing on geothermal heat
- Review the present policy environment, including the 2020 EU target on renewable energy; and
- the future policy environment:
 - the Renewable Heat Incentive
 - removing non-financial barriers to renewable heat
- What happens next?
- Q & A

Five objectives underpin Government energy policy:

- Affordability
- Mitigating Climate Change
- Secure and Diverse Energy Supplies
- Maximising Economic Opportunities
- Meet legal obligations

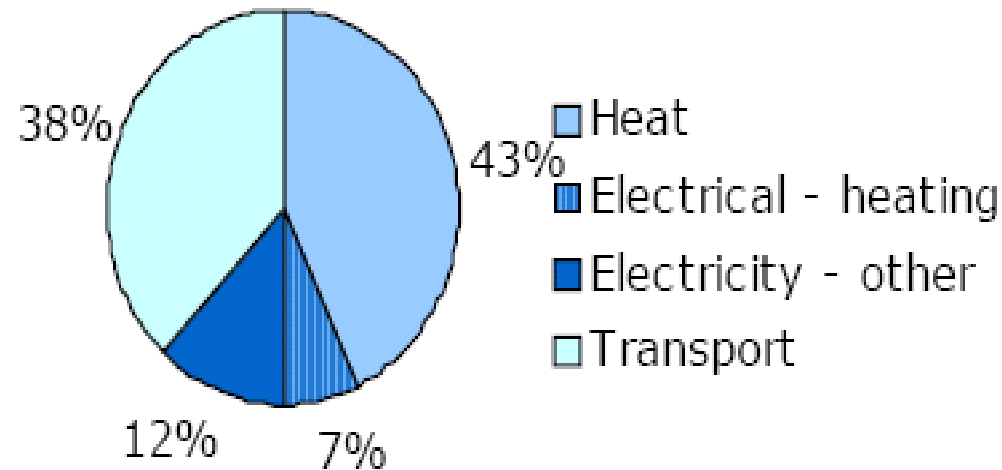
The UK's energy targets are challenging – and legally binding



- Stay within the carbon budgets set by the recent Climate Change Act
- Reduce UK greenhouse gas emissions 80% by 2050
- Source 15% of our total energy supply from renewable sources by 2020

Why does heat matter?

Figure 1.1: UK final energy demand 2005



Source: BERR Energy Trends 2007

Heat is half the battle



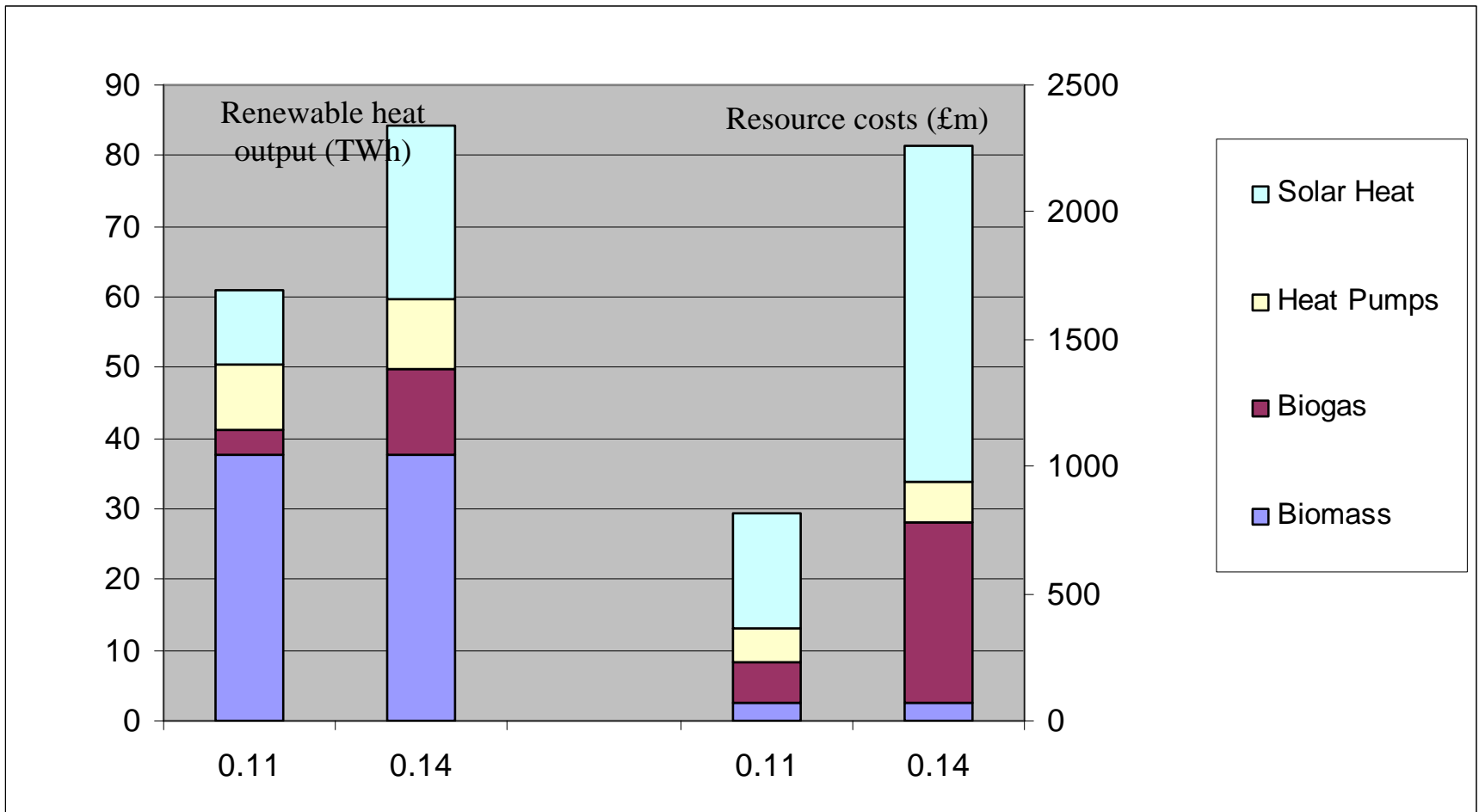
- Heat production is responsible for 49% of the final energy consumed in the UK, and 47% of the carbon emissions (2005)
- Meeting the UK's 2020 and 2050 carbon reduction targets will require a shift to low carbon heat
- Heat is also central to security of supply issues
- Meeting the 2020 EU target on renewable energy will require a large contribution from renewable heat

A closer look at the 2020 EU target



- Target was agreed in 2007. Member states' shares were agreed in late 2008.
- Headline target is 20% of final energy demand across the EU by 2020. UK's share of the target is 15% (present level: 2%)
- RES consultation (June 2008) suggested one scenario:
 - 32% of electricity from renewables (5% at present)
 - **14% heat from renewables (0.6% at present)**
 - 10% renewable transport fuels (2% at present)

How could the 14% break down?



NB – this is one possible scenario. The analysis on technology costs and potentials will be updated for the final Renewable Energy Strategy

Several technologies are available



Well known renewable heat technologies include heat pumps, biomass, solar thermal, biogas, heat from waste...

- Can only estimate how cost-effective different technologies will be up to 2020
- Analysis for RES was based on cost curves for renewable heat in 2015, 2018, 2020, and various other constraints
- Biomass made biggest contribution under the scenarios that emerged, with heat pumps and biogas making the next two largest contributions

NB this was only one possible scenario - not a prescriptive plan. Ultimately market will decide most efficient mix of technologies.

Policies that support renewable energy now



- The 'Renewables Obligation' provides financial support to renewable *electricity*. Has been banded from 1 April with 'innovative' technologies - for example deep geothermal electricity - eligible for higher support (2 ROCs/MWh).
- Renewable Transport Fuel Obligation supports renewable *transport fuels*.
- Range of grant programmes: Low Carbon Buildings Programme, Bioenergy Capital Grants Scheme. Local/regional grants also available.

Clear that these 'business as usual' policies would not be enough to deliver renewable *heat* at the scale required by the 2020 target.

Government has acted: the 'Renewable Heat Incentive'



- Energy Act 2008 includes 'enabling powers' that will allow us to establish the '**Renewable Heat incentive**' (RHI).
- This will provide financial support to generators of renewable heat – including heat pumps at all scales
- Heat from deep geothermal sources also likely to be eligible for RHI support
- We expect RHI to be in place by April 2011. Has the potential to transform the UK's renewable heat sector

A closer look at a (possible) RHI



One version of the RHI was set out in the RES consultation*.

- The RHI will support generators of renewable heat at a set rate of £X per MWh – to be determined!
- Provides a predictable income stream to renewable heat generators, increasing uptake and reinforcing supply chains
- Could well be banded
- Paid for by levy on suppliers of fossil fuels for heat
- Could be ‘deemed’ at smaller scales i.e. lifetime payment available up front to help offset high capital costs (so looks a bit like a grant).

The enabling powers in the 2008 Energy Act are broad - gives us flexibility to draft the RHI regulations

*See: <http://www.berr.gov.uk/files/file46799.pdf> box 4.2

Removing non-financial barriers



By itself RHI might not deliver renewable heat at the scale we need: we also need to remove **non-financial barriers**.

- Awareness raising of renewable heat opportunities among potential investors, both in the private and public sectors
- Educating officials at local and regional level about the potential for renewable heat. Ultimate want to make renewable heat solutions a well known and user-friendly mainstream heat option
- Improvements in building regulations for new homes. No decision yet on retrofit or renovation
- And many others...very keen to hear your views.

Who in Government does heat policy?

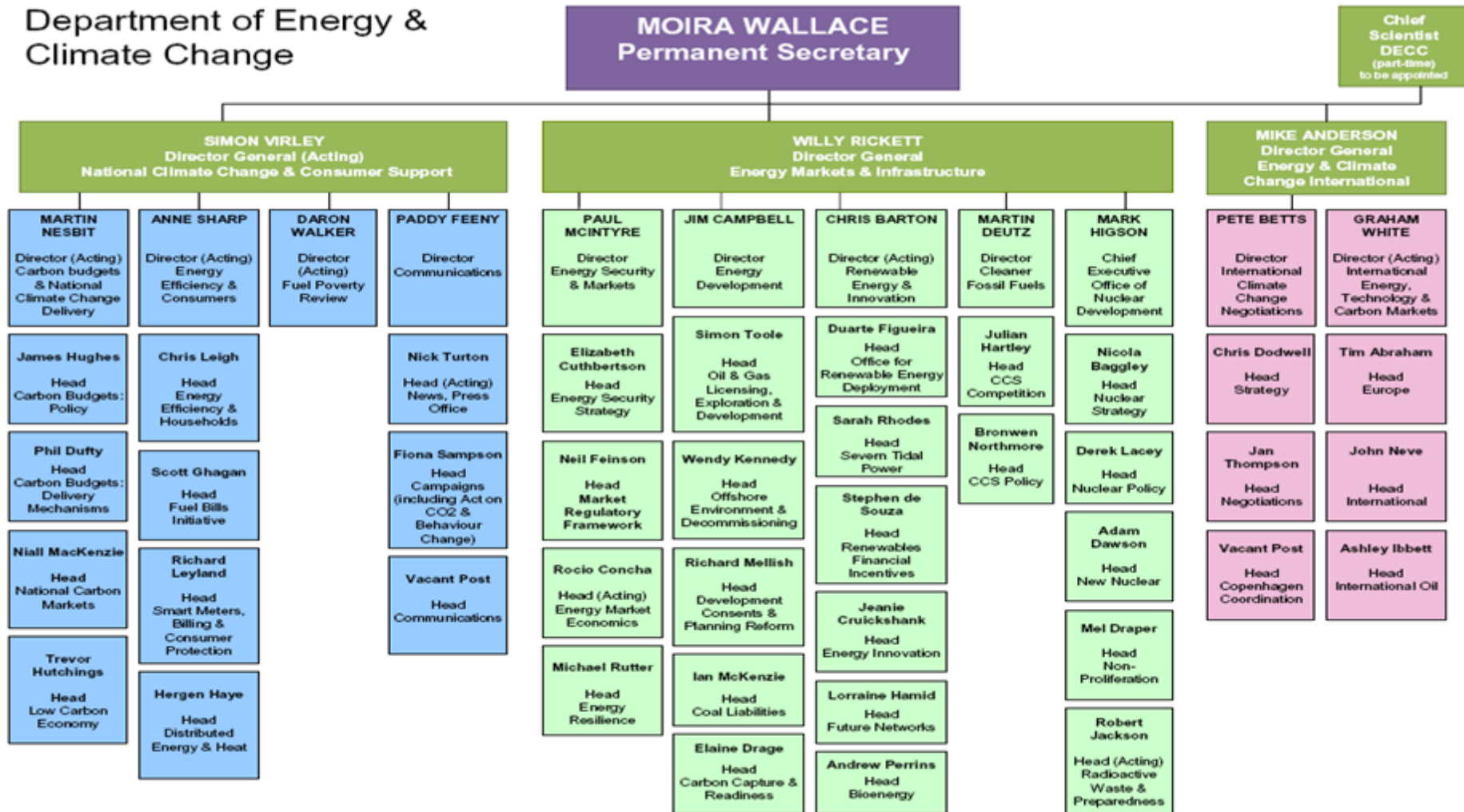


- Department of Energy and Climate Change (DECC) formed last October
- Heat Policy team from BERR is now in DECC, with a new name: 'Distributed Energy and Heat Team'. Hergen Hays is head of team.
- DE & Heat Team leads on non-financial barriers to renewable heat - including heat pumps. We also cover deep geothermal power.
- Development of the RHI being taken forward by DECC's 'Renewables Financial Incentives' Team
- DECC's Energy innovation team leads on innovative technologies

The DECC Organogram



Department of Energy & Climate Change



What happens next?

- Renewable heat only part of heat policy development - the 'Heat and Energy Saving Strategy' was published on 12 February. Can view it at <http://hes.decc.gov.uk/> . The final 'Renewable Energy Strategy' will issue later this year
- Work continues on delivering the RHI, which is a major task. Will require legislation (SI) and public consultation.
- Strong focus on helping the renewable heat sector in the period before the RHI is introduced
- Work to remove non-financial barriers is in progress

Heat is now a well established area within energy policy

Q & A



Thank you very much for listening