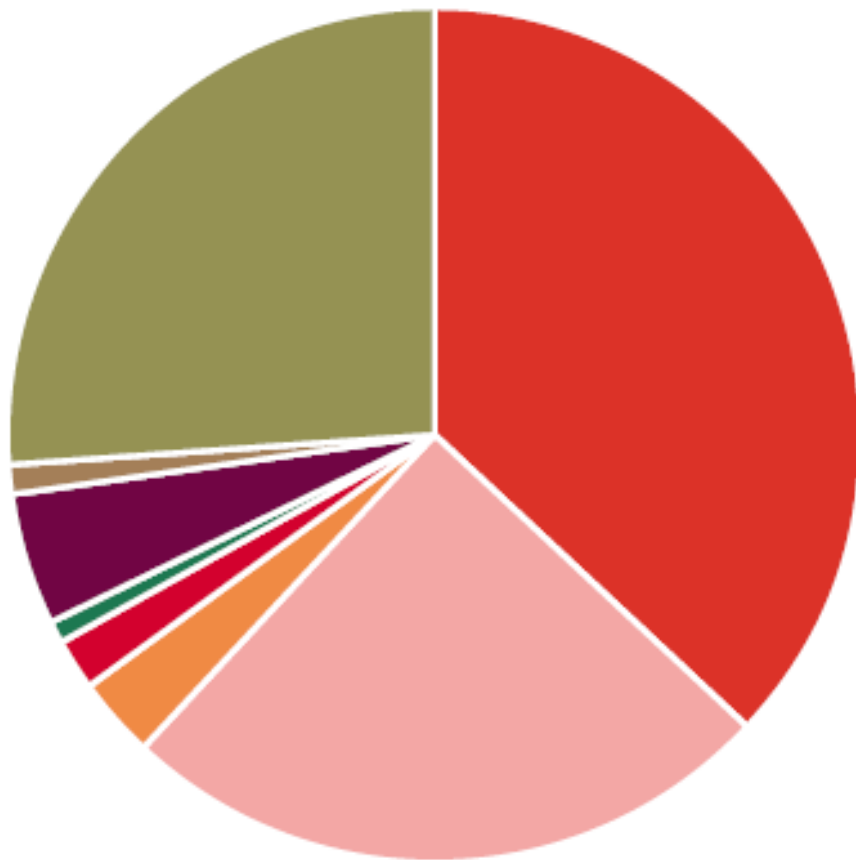


# Decentralised Energy potential

Dr. Douglas Parr, Chief Scientist  
**Greenpeace UK**

BIEE/UKERC Conference, Oxford  
20 September 2006

# UK Costs of electricity



Generation 37%

Distribution and metering 25%

Transmission 3%

Renewables Obligation 2%

Energy Efficiency Commitment 1%

VAT 5%

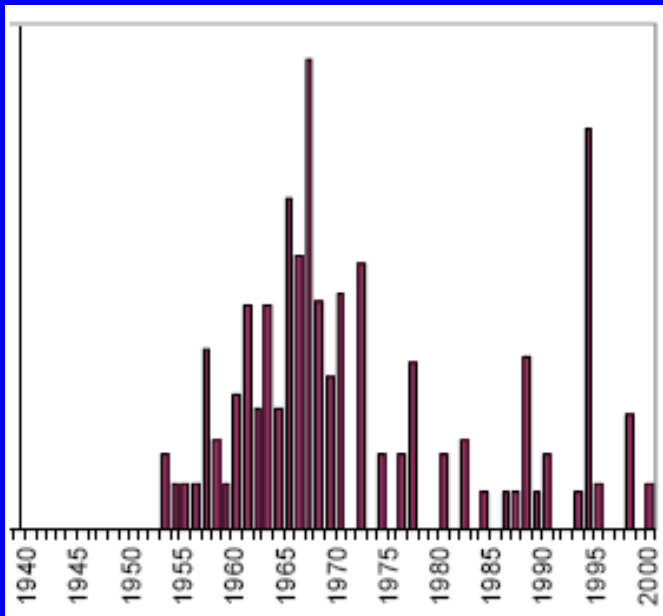
Balancing Service Use of System 1%

Supply costs and margin 26%

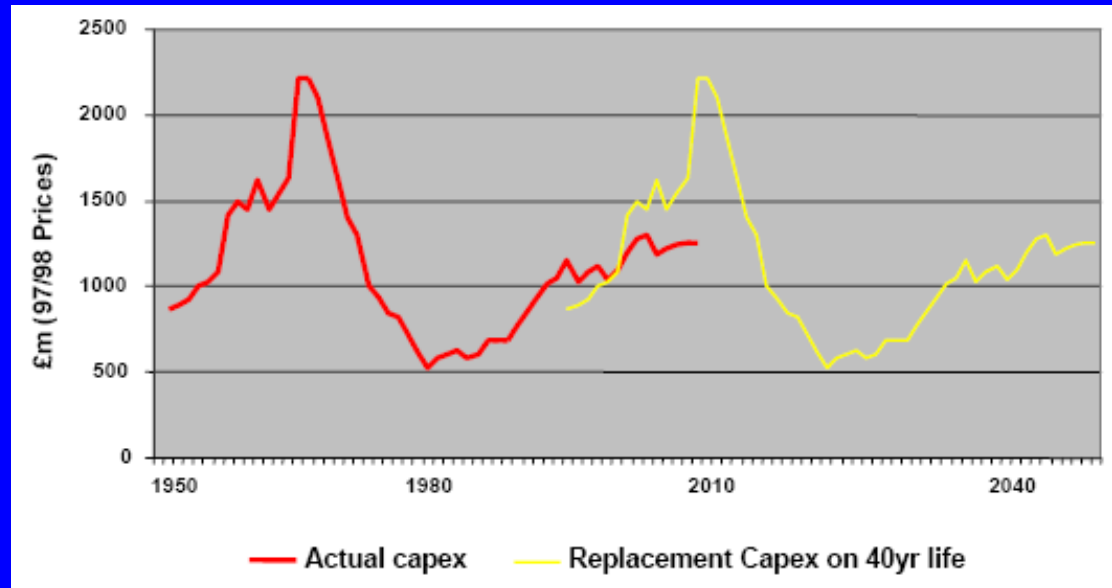
# Transmission and Distribution in the UK – An ageing system

*Decentralised energy requires less Transmission and Distribution network investment than central generation*

Age profile of 132kV Transformers for a UK DNO



UK Distribution Capex Profile



# World Alliance for Decentralised Energy - Model applied to UK



- WADE consultants to Foreign Office, EU, Canadian Govt.
- Compared a nuclear centralised system to that of local generation & renewables over 20 years

# WADE model - UK Results

*Decentralised Energy generation is more cost-effective in reducing CO<sub>2</sub> emissions from the UK power sector than centralised generation – 17% in this scenario*

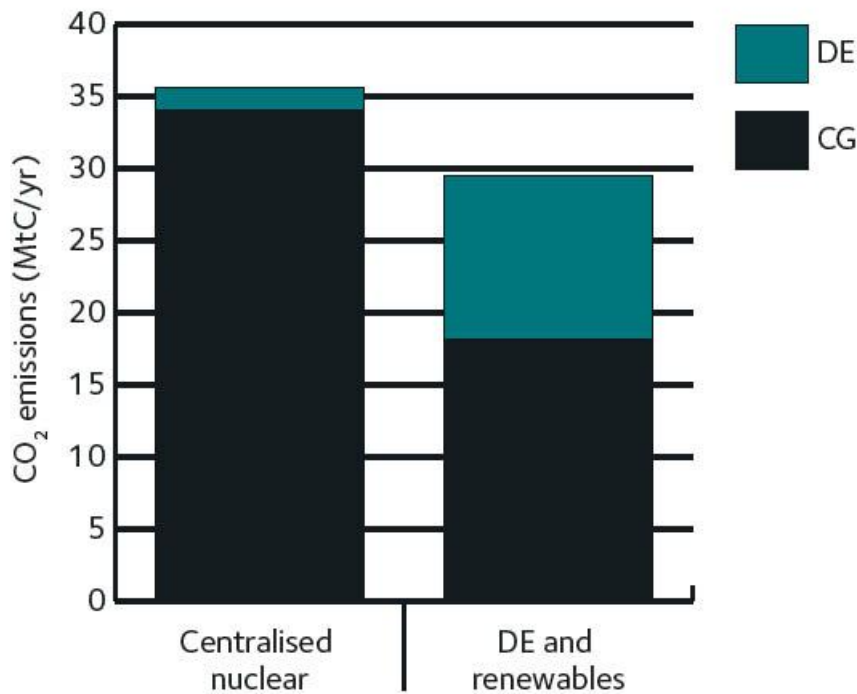
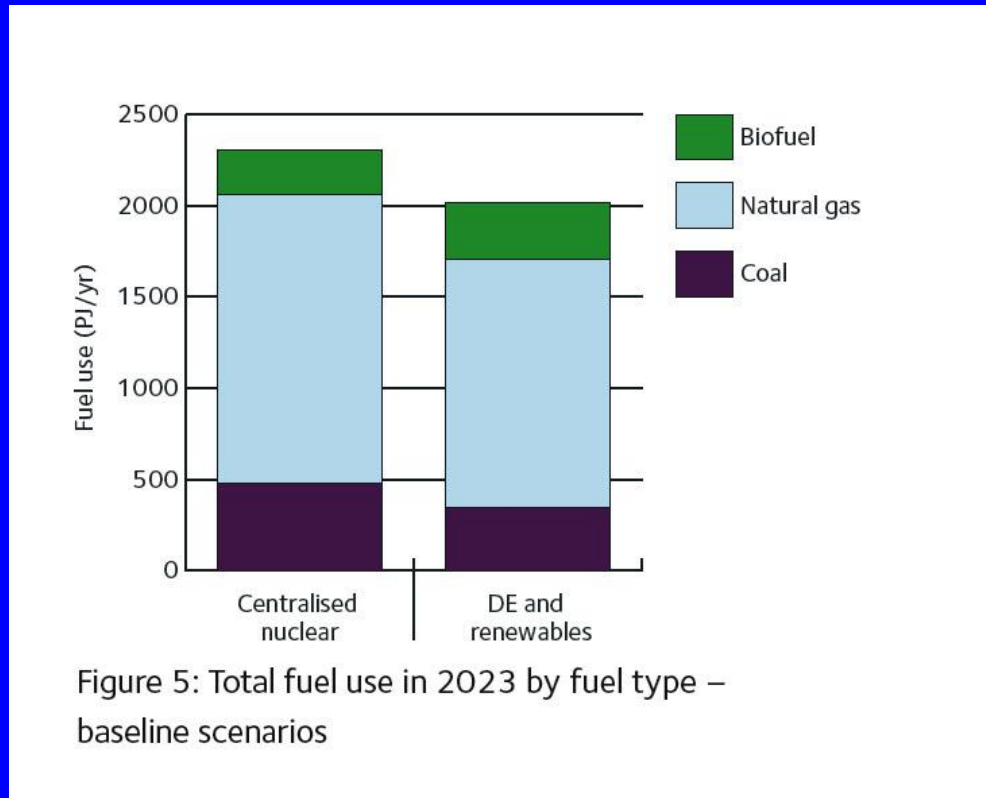


Figure 2: CO<sub>2</sub> emissions in 2023 – baseline scenarios

# WADE model - UK Results

*Decentralised Energy generation reduces natural gas use by 14% compared to the centralised nuclear scenario*



# WADE model – UK results

- Both capital and retail costs lower under DE/renewables scenario
- But small difference between 2 large numbers with high uncertainties.....

# Decentralised, Local Energy in London

- Over 20 years DE in London could:
- Cut CO<sub>2</sub> emissions by 28%
- Cut gas use by 7% compared to nuclear renaissance
- Europe's largest city has established Climate Change Agency
- New planning proposals support this vision





# Working Experience

77%

cut in CO2 emissions associated with local government estate including social housing.

**GREENPEACE**

# Aberdeen address fuel poverty

- City council set up Not-for-profit company which install 3 CHP plant
- Cut heating bills and CO<sub>2</sub> emissions by 40%



Photo courtesy of EST

**GREENPEACE**

# Political progress....

- “Combating the threat of climate change will require some really fresh ideas and radical thinking. We cannot expect to meet the challenges of this century by toying with the structures and technologies we have inherited from the past, and the concept of Decentralised Energy should to be taken seriously.”

**David Cameron, Conservatives, 1 March 2006**

- “There is a low carbon, non-nuclear alternative..... we get serious about energy efficiency and renewables and... we invest in a decentralised energy system with local Combined Heat and Power and domestic microgeneration.”

**Ming Campbell, Liberal Democrats, 20 June 2006**



**Decentralised  
generation.....**

**Inspires people to  
think about  
energy**

**GREENPEACE**

# Shifting attitudes through decentralised energy

“Living in a house where [micro-generation] has been installed can significantly shift awareness, attitudes and behaviour....micro-generation provides a tangible hook to engage householders emotionally with...energy use”

“Seeing the Light” Research for UK  
Sustainable Development Commission, Hub  
Research Consultants

[www.sd-commission.org.uk/pages/291005.html](http://www.sd-commission.org.uk/pages/291005.html)

**GREENPEACE**