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Energy Efficiency

UK Policy and Mechanisms for Delivery

Sir Patrick Haren, FREng
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UK Policy for Energy and Climate Change

- **Background of Energy White Paper 2007**
[www.dti.gov.uk/whitepaper/page39534.html]

- **2 long-term energy challenges:**
 - **Addressing climate change by reducing CO2 emissions; and**
 - **Ensuring secure, clean and affordable energy**

- **4 Energy Policy Goals:**
 - **Move towards reducing UK CO2 emissions by 60% by 2050;**
 - **Maintain the reliability of energy supplies;**
 - **Promote competitive markets in the UK and beyond; and**
 - **Ensure that every home is adequately and affordably heated**



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Role of Energy Efficiency in Energy & Climate Change

- **One of the most cost-effective means of reducing carbon emissions**
- **Supports key energy policy goals:**
 - **Reduces energy import dependence;**
 - **Aids the competitiveness of the economy; and**
 - **Delivers affordable energy to low income households**
- **Requires: (1) energy efficiency in products, processes and buildings and (2) behavioural changes in patterns of consumption**
- **The UK supports EU proposals to save 20% of the EU's energy consumption through improved energy efficiency by 2020**
- **Separate policy measures for Residential, Commercial/Industrial and Public Sectors**



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Energy Efficiency in the Residential Sector

- ❑ **Carbon emissions from residential electricity & heating represent 27% of UK total CO2 emissions**
- ❑ **Energy efficiency measures delivered by economic incentives, regulation and information to drive behavioural change**
- ❑ **Electricity & Gas Suppliers must meet regulated Energy Efficiency/Carbon Emissions Reduction Targets for households**
- ❑ **Regulated energy labelling of household electrical appliances drives product standards and encourages consumer choice**
- ❑ **Building regulations set minimum standards for residential housing**
- ❑ **Energy Performance Certificates for all homes sold or rented**



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Energy Efficiency in the Large Industrial Sector

- **Efficiency in energy-intensive industries is driven by intrinsic economic incentives to reduce cost and remain internationally competitive**
- **Industrial/Commercial sectors subject to Climate Change Levy as a tax on non-residential energy use**
- **Climate Change Levy Agreements engage over 50 sectors of energy-intensive industry in negotiated agreements for reduced energy use**
- **Under the EU Emissions Trading Scheme, energy-intensive industries have an additional incentive to maximise energy efficiency to reduce carbon emissions**



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Energy Efficiency in other Commercial/Industrial Sectors

- ❑ **New Carbon Reduction Commitment will address other commercial sectors such as banking, retail, hotels etc to drive lower carbon emissions through energy efficiency**
- ❑ **Energy Performance Certificates will be required for all non-residential buildings**
- ❑ **Consultation on zero-carbon target for new non-domestic buildings from 2019**
- ❑ **Government-funded Carbon Trust provides information, advice and loan finance for energy efficiency measures in SMEs**
- ❑ **Voluntary agreements proposed with licensed energy suppliers to promote energy efficiency to SMEs**



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Energy Efficiency in the Public Sector

- **EU Energy End-Use and Energy Services Directive requires government to show leadership in energy end-use efficiency**

- **UK measures include:**
 - **specific finance for energy efficiency improvements within the public sector;**
 - **mandatory purchase of energy-efficient equipment and transport vehicles; and**
 - **procurement of energy-efficient public sector buildings**

- **New Carbon Reduction Commitment will apply to large public sector organisations such as Local Authorities, Hospitals, Schools, and Government Departments**



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Energy Efficiency Public Sector Targets

- **UK Target for 30% reduction in emissions from Government buildings by 2020**
- **All new schools to be zero-carbon from 2016**
- **UK Government goal to be leader in sustainable public procurement by 2009, with targets for energy efficient office equipment and carbon efficient transport for public sector use**



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Energy Efficiency in Transport

- ❑ **Strong UK commitment to investment in public transport, including increased railway electrification**
- ❑ **Vehicle Excise Duties promote energy efficient, lower carbon cars**
- ❑ **Duties on fuels promote fuel efficient vehicles**
- ❑ **Purchasing power in public procurement used to encourage vehicle manufacturers to deliver energy efficient cars**
- ❑ **Supporting EU proposals for new fuel efficiency standards for cars**
- ❑ **Supporting innovation for lower carbon transport technologies**



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Technology Trends in Energy Efficiency

- ❑ **Investment by energy-intensive industries in new production generally delivers increased energy efficiency with best available technology**
- ❑ **Variable speed drives for fans, pumps and compressors deliver energy efficiency improvements across a wide range of industries**
- ❑ **High efficiency lighting, refrigeration and heat recovery mechanisms deliver to industry, commercial and public buildings and in retail**
- ❑ **Ground-source and air-source heat pumps increasingly deployed in commercial and residential environments**
- ❑ **Smart-metering in industrial, commercial and residential sectors an increasingly important target for Government**
- ❑ **Micro-CHP and micro-generation technologies a new focus for increased efficiency through decentralised/distributed energy supply**



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Thank you for listening.....