

Speaking note for German-British Forum Event 20th October 2009

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a) Context: climate change and perfect storm

- The rise in global demand for food, energy and water, coupled with population growth and climate change, threaten a 'perfect storm' of inter-related challenges.
- Population increasing by 6 million every month. Energy demand predicted to increase by approaching 50% by 2030. Food production must increase by about 50% by 2030. 1 in 3 people already facing water shortages.
- People are moving increasingly into our cities and towns. 2008 marked the first time in history that half of the world population lived in urban areas, and the world urban population is expected to nearly double by 2050, increasing from 3.3 billion in 2007 to 6.4 billion in 2050. By 2030 60% of world's population will be urban.
- The pressures on resources and sustainability will become increasingly challenging, if we do not respond now on the scale required to bring forward solutions. We are already seeing impacts – for example in terms of threats from food, energy and water security, which will become more severe over the coming decades and be felt in all countries.
- All the elements of the 'perfect storm' are inextricably interlinked and no single issue can be tackled in isolation. We must work on a global, international level, in close collaboration.
- Science and engineering can make a major contribution to providing the practical solutions we need.

b) Importance of Governments and Industry working together

- Collaboration needed not just between countries but also across the public and private sectors, and with the research community.
- Governments and industry both have important roles and contributions to make.
- For Government, leadership is key to set the right policy and regulatory framework. This is vital to ensure that if the private sector has the context and the incentive to invest. Opportunity is a powerful motivator, and the key challenge is to align commercial and environmental goals.
- Government also has the a major role in facilitating the development of the infrastructure for technology transformations – such as a shift to electric vehicles, and for supporting the creation and development of new and emerging technologies at the early stages of development.
- More generally, Governments must create the economic climate for businesses to succeed, by promoting stability, through effective and proportionate regulation, and by investing in the education.
- Government cannot lead in a vacuum however. Close dialogue is vital to develop a shared understanding about the nature of the challenges and a vision for how these can be addressed,
- The scale of the challenge to transform our energy systems to radically reduce emissions and to ensure energy security is great.
- The IEA has described this vividly in setting out a possible pathway to a 50% reduction in emissions by 2050. There are uncertainties of course – it is difficult to predict the future – but it

is clear that emissions reductions from fossil fuel use will have to account for the great majority of all abatement (about 48Gt out of total 56Gt), and that decarbonisation of electricity will be critical to achieving this reduction, making the single biggest contribution.

- Countries will need to choose their own paths to suit their own circumstances e.g. legacy systems, skills, natural resources

c. Mechanisms in the UK to help us along the way

- To engage industry in the development of the UK's Strategy and policy on energy – the Energy Research Partnership. Brings together very senior people within some of the major power companies and Government officials responsible for energy within Government. This guides government decision making at the highest level.
- It is essential that public and private investment in low carbon energy RDD&D remains very well co-ordinated in order to maximise the rate of progression of low carbon technologies to market
- There are a number of bodies in the UK which work at various levels in the innovation chain:
 1. SUPERGEN - EPSRC's flagship initiative in Sustainable Power Generation and Supply. It is part of the Research Councils' Energy Programme and is managed and led by EPSRC in partnership with BBSRC, ESRC, NERC and the Carbon Trust.
 2. Energy Technologies Institute. ETI projects will enable major deployments of low carbon energy systems from 2020 to 2050. This Institute is fully 50:50 funded between Government and industry partners, and with funding of £600m over 10 years and the potential for that to increase as new industry partners come on board.
 3. Technology Strategy Board has a distinctive role in the UK energy innovation chain. It focuses on wealth creation for UK business through technology innovation. Current mechanisms include collaborative research and development, innovation platforms, knowledge transfer networks and knowledge transfer partnerships.
 4. The Carbon Trust's mission is to accelerate the move to a low carbon economy by working with organisations to reduce carbon emissions and to develop commercial low carbon technologies.