



UK Energy Supply & Demand to 2020

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The Energy Review, reported summer 2006

Challenges & Solutions, October 2005. A
balanced approach

- Five themed sessions
 - Demand
 - Nuclear
 - Fossil fuels
 - Renewables
 - Impact – social, cultural, political

Demand



- Demand reduction a key element
- Vital role of individuals and small businesses
- Energy performance to be recognised
 - buildings: the EU Performance of Buildings Directive
 - equipment: labelling, life cycle costing
- Current technology under-exploited
 - Do we need more?
- Government
 - Leadership in public engagement
 - Fiscal incentives
 - Regulatory standards



Nuclear

- Difference of opinion as wide as ever
- Fission power is commercially mature
- Meeting emissions targets ~ new nuclear
- International standards and approvals
- World build capacity is finite
- Public concerns
 - Honest consultation
 - Open and transparent decision process



Fossil Fuels

- Primary energy source to 2050
- Oil supply will not meet demand by 2050
- Nat. gas will be available, but supply buffers needed
- Coal issue is clean usage, not supply or price
- Need to prioritise fossil fuel use?
- Convenience & infrastructure - inertia



Renewables

- Continued growth as energy supply
- Perhaps 40% current demand by 2050
- Continued support for RDD&D
- Cost reductions probable
- Power infrastructure will need to change



Impact

- Public engagement poor
 - Failure to recognise how people interact with the energy system
 - Behaviour change needed
- Business reacts to appropriate incentives
 - Carbon trading has impacted, as has price
- Need clear and consistent incentives
- Effective engagement of public & business
- The market alone will not deliver



The Energy Hierarchy

1. Energy conservation
2. Energy efficiency, zero carbon buildings
3. Renewable, sustainable energy supplies
4. Other quasi-sustainable supplies: biofuels, 'clean coal', perhaps nuclear
5. Fossil fuel supplies



C&S Conclusions 1

- Demand reduction is key element
 - Technical and behavioural change
 - Existing technologies are not fully exploited
- Public engagement is crucial
 - Needs more perceptive approach
 - Technical and economic arguments inadequate



C&S Conclusions 2

- Government has key role
 - Consistent long term market signals
 - Structured and consistent incentives
 - Regulatory changes
 - Responsibility for public engagement
- Market alone will not deliver

Why do this?

.....forget the environment!

- Energy is high on the agenda
- Save money, back to the 80's
- Conserve a finite resource, especially oil
- Minimise the nuclear build
- ...and OK, feed into the CSR argument, because climate change is also high on the agenda



For my business: where are we today?

- Many larger users are good energy managers
- Many are not and the bulk of smaller users have a long way to go
- Recent serious price hikes are beginning to have an effect
- The Carbon Trust is updating its services this year



The barriers to delivery

- Availability of energy consumption data
- Energy costs may be a few percent of overheads
- Lack of in-house resources
- Lack of commitment at the top
- 'twas ever thus



The way forward 1

- The M&T Action Group, feeding through to Energy Watch and Ofgem
- Professional development
 - What is the skills gap?
- Public engagement, feeding through to the workplace
- The Engineering Forum for Energy
- An Inconvenient Truth!



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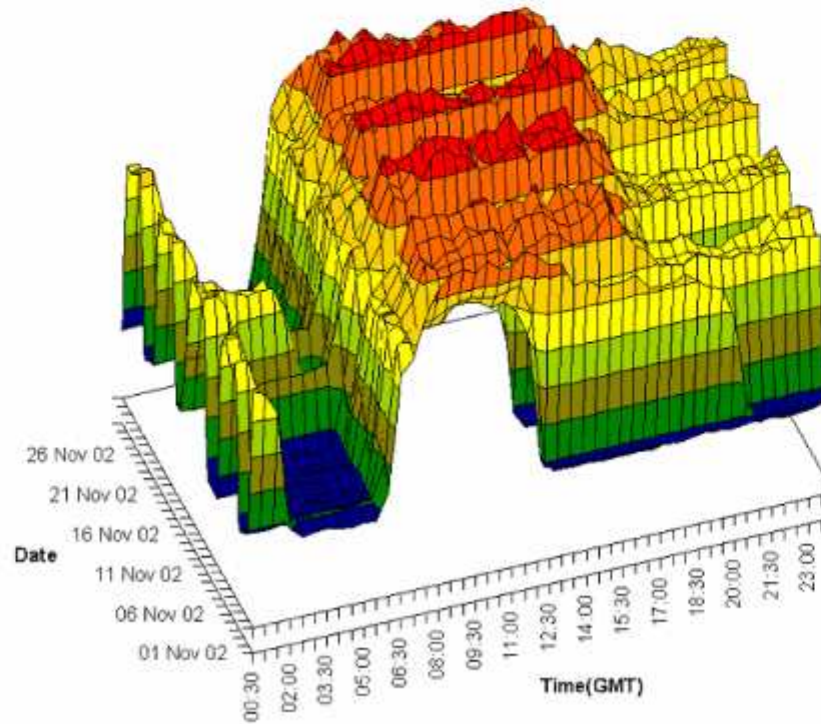
Climate Change Our Business

Nersi Salehi

Changing a Threat into Opportunity

Power demand in 10 kWh

- 0-5
- 5-20
- 20-35
- 35-50
- 50-65
- 65-80
- 80-95
- 95-110
- 110-125
- 125-140



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The way forward 2

- Building labelling: Operational Ratings
- Enhancements to Emissions Trading
 - Energy Performance Commitment
- EU Energy End Use & ES Directive
- Energy Efficiency Accreditation
- Longer term targets essential
- Road and air transport are the big challenges



Changes for my business.....

- Energy efficiency is a win – win situation
- High costs won't go away
- Stakeholders will expect a commitment: what is our carbon footprint?
- What do we do then?
 - Make someone responsible – the Energy Manager
 - Monitor energy and water and sort out the bills
 - Develop a plan (ask the Carbon Trust for help)
 - Implement and review
 - Tell everyone – gain Energy Efficiency Accreditation



Times of transition always create opportunities

- The hydrogen economy
- Carbon sequestration and storage
- Microgeneration
- Embedded renewables



The role of the Energy Institute

- Professional development
- The consultants' register
- Training courses and advice

- www.energyinst.org.uk