

NERA

Economic Consulting

Overview of The PIU Energy Review

Presentation for APGTF Workshop, DTI

10 September 2002

Gordon MacKerron

NERA

Over the last decade or more, a fortunate combination.....

- Liberalisation and re-regulation pressing gas/electricity prices down
- World fossil fuel markets slack
- Good luck – especially that commercially dominant CCGT had virtuous environmental characteristics

.....meant that final energy prices fell, while environmental quality improved (SO_x, NO_x and CO₂)

Future Likely to Differ

- **Challenge of RCEP – 60% carbon emission reductions by 2050**
- **Energy security apparently threatened**
 - California
 - Gas imports
 - Fuel protesters
 - Investment incentives
- **Fossil fuel prices may not stay low forever**

Sustainable Development

A very big idea, encompassing following objectives

- Economic
- Environmental
- Social

All policy domains meant to contribute to all objectives

Energy Policy

- **Capacity to deliver these three ‘sustainability’ objectives is highly variable**
 - Social objectives – rather little, though some in equity/fuel poverty
 - Economic objectives – rather more, though energy fairly minor component of most business costs
 - Environmental objectives – if climate change matters then *only* energy policy can deliver: 80% of GHG emissions derive from energy system
- **This means that where there are trade-offs, future presumption will be in favour of environmental objectives**
- **Suggested future objective of policy: ‘the pursuit of secure and competitively priced means of meeting our energy needs, subject to the achievement of an environmentally sustainable energy system’**

Energy Security (1)

- **Security seen as an underpinning objective – too little of it undermines all other objectives. Governments tend to be blamed if lights go out a lot**
- **Problem is: how much security is enough?**
- **A variety of *potentially* real risks, classified as**
 - Originating outside the UK
 - Originating within UK borders

Energy Security (2)

The following *not* taken seriously

- That imports are axiomatically bad – in fact, they add to diversity and offer access to low cost resources
- That there are problems of resource scarcity – in fact, fossil fuels not seriously scarce for some decades and then oil the one potentially serious scarcity problem
- That problems so acute that major market interference needed: - in fact, no case for carving up electricity market, or giving subsidies to favoured technologies/fuels

Energy Security (3)

What is needed for security

- European gas/electricity liberalisation
- International/co-operative action e.g. on transit security
- Encourage more resilience in energy system e.g. via considering storage, LNG, keeping coal capacity open etc.
- Monitoring investment incentives in UK energy system

Scenarios to 2020 & 2050

- **Adopted Foresight scenarios: none for 2050 are business as usual, and having four means that there is no 'central' future**
- **2020: Striking finding that on all scenarios, gas as proportion of energy use rises (though absolute use might fall a bit in 'environmental' scenarios)**
- **2050: 60% cuts in emissions are possible at cost of well under one year's growth in GDP**
- **Equally striking finding to 2050 that even if electricity is zero-carbon by mid-century, very large cuts in transport emissions needed (or radical new vehicle technology) to approach the 60% cut**

Approaches to Low Carbon Economy

- Prime need is for precautionary and preparatory action to get on to right path
- Timing important: don't go it alone, don't be reactive, but be 'just ahead of the pack': create options to reduce costs in future
- Support innovation more widely
- Start with lowest regret, most cost-effective measures
- Ensure flexibility and reversibility
- Clarify commitment to long-term carbon valuation, probably to include carbon taxes as well as trading

Energy Efficiency (1)

- Has large low-cost potential: much energy efficiency investment results in net *savings*, not costs. Even if 'hidden costs' are large, still the lowest cost low carbon option
- Has great advantage that it is consistent with all sustainable development objectives and with energy security objectives
- PIU report puts energy efficiency at the centre of future energy policy
- Household energy efficiency critical – target is 20% improvement by 2010, and 20% more by 2020
- Multiple policy interventions needed but no single dramatic 'solution'

Energy Efficiency (2)

.....though issues remain.....

- efficiency policy is not costless for everyone: some households may 'lose' (eg in EEC) and carbon valuation will raise energy prices at some point**
- solutions to fuel poverty mean that 'rebound effect' may be substantial in early years – efficiency gains (rightly) taken in higher comfort not less energy use**
- some policies will only deliver gradually, as they depend on capital stock replacement**
- role of local agencies – including Local Government – is critical, but may take time to become fully effective**

.....potential remains enormous, and policy profile badly needs to be raised

Renewable Energy

- The main supply side way to create new options
- While much development will be international, specific UK efforts needed in some areas, especially marine
- New target for 2020 of 20% of electricity supply: could raise household prices by 5% to 6% (but not necessarily household *bills*)
- Major problems stand in way of 10% target for 2010: need to improve planning, NETA and charging system

Nuclear Power

- **Zero carbon electricity on potentially large scale**
- **Current proposals inflexible: 10 GW programme**
- **Technology will stay available internationally for some time**
- **Need to encourage longer-term low-waste modular designs**
- **Nuclear should benefit from future carbon valuation measures**
- **But waste remains a large political (though not economic) problem**

- **Environmental impacts very serious: ‘clean coal’ still quite dirty**
- **Will not disappear in medium term, and should be available as security back-up**
- **No serious long-term role unless carbon removal becomes established**
- **UK has advantages in capture and sequestration, and prospects should be researched more intensively: may be case for more public support**

Institutions

- Long term case for combining energy policy, climate change and transport in one department
- Immediate priority is to set up a Sustainable Energy Policy Unit
- Also important that DTI energy supply role be combined with DEFRA demand side role: current division risks incoherence
- Local planning system a major brake (though citizen involvement remains important)
- Independent economic regulation should stay independent and economic
- But this may imply occasional need to legislate for environmental goals
- New institutions may be needed for R&D

Taking Low Carbon Seriously May Be Politically Difficult

- **Moving to low carbon economy creates losers as well as winners**
- **Implementing necessary changes may require overcoming difficult barriers – e.g. local resistance to new investment, business opposition to taxes, resistance to nuclear power**
- **Need for wider public engagement as energy decentralises and touches more citizens directly. Current DTI consultation attempting this**
- **DTI Consultation, plus White Paper by early next year, should raise awareness of big issues**