

Defining a Framework for coherence in UK energy policy

(Note by Energy Advisory Panel)

Introduction

1. Making energy policy is a complex and difficult process, both because of great uncertainties, but also because of potential conflicts between a number of objectives, involving trade-offs and compromise. Nevertheless, whatever the difficulties, seeking the greatest possible degree of coherence between the three main policy areas of Climate Change, Security of Supply, and "Competitiveness", will have intrinsic merit: it will make the total policy framework more robust and durable over time, and consistent with the basic concept of "sustainability", as well as helping public presentation and acceptability. The process of achieving coherence involves identifying and promoting synergies and mitigating conflicts between the three main policy areas. The purpose of this note is to suggest how this task might be undertaken.

Definition of objectives/main parameters

2. Clearly this search for coherence will be conditioned by the degree of clarity, and rigour in the Government's definition of the objectives/main parameters of climate change policy, security of supply, and "competitiveness".

3. On climate change, a major issue is the way in which the Government responds to the RCEP report - namely, whether the UK should be "put on the path to reduce CO₂ by 60% by 2050", or whether for the moment nothing should be added to the present Climate Change Programme. This question cannot be resolved by conventional economic calculation, particularly as it is not possible to draw the UK's "marginal benefit curve" for CO₂ emission reduction. The setting of UK emission targets will be essentially a political process, embodying the precautionary principle (albeit influenced by scientific advice), which the Government cannot delegate to others.

4. Further, it will not be practical for standards of security of supply to be determined by the market, not least because the risk aversion of the commercial players in the market might well be less than the risk aversion of society as a whole. Thus to a greater or lesser extent, Government will have to define what is meant by a "secure" system. Otherwise, it will not be possible to take a view on what is "adequate" investment, or what costs should be incurred to provide the flexibility to avoid a variety of possible "shocks".

5. Finally, "competitiveness" is an elusive term. Sometimes it is used to denote the extent to which energy markets are operated under conditions of

competition. But competition in this sense is a means rather than an end. Further, the rationale for competitive markets has often been expressed primarily in terms of their ability to reduce prices to final consumers (which can cause conflicts with environmental objectives). What is needed is a wider definition of “competitiveness” which will denote the overall economic efficiency of the UK energy system to meet the nation’s energy needs at minimum resource cost over time in such a way as to be compatible with safeguarding the international competitiveness of UK business in the traded sector, and with social equity (particularly the solution of “fuel poverty”, where “affordability” is a useful concept).

Methodology

6. We suggest that there is a strong case for a systematic analysis of all significant measures of energy policy currently being implemented or proposed to examine actual and potential synergies and conflicts, and broad costs involved in trade-offs, as between

Climate Change and Security of Supply

Climate Change and “Competitiveness”(Energy Costs/prices)

Security of Supply and “Competitiveness”(Energy Costs/prices)

This examination would need to cover an extended period (to 2020?) against several scenarios (eg high v low oil prices)

A very preliminary assessment

7. In order to carry out a very preliminary assessment at a high level of aggregation, we have adopted the following parameters:

(i) UK CO₂ emissions to 2010 would conform to the “20%” target, and would continue to reduce thereafter at broadly the same rate, under an “active” climate change policy

(ii) Security of supply standards (particularly of the electricity and gas systems) should not be less rigorous than currently attained.

(iii) “Competitiveness” should be defined along the lines of para 5 above.

8. On this basis, a very preliminary assessment would suggest the following broad conclusions:

(i) Measures designed primarily to reduce CO₂ (reduced energy demand, renewables/CHP and theoretically, nuclear) would

(a) Greatly assist long term security of supply in its "strategic" aspect, by diminishing the UK's dependence on imported gas and oil. On the other hand, work still remains to be done to give assurance that the growth of embedded generation and "intermittent" renewables can be made compatible with the internal security of the UK electricity system.

(b) However, although there is great potential for cost-effective energy saving, and although some low-carbon technologies are already at or near the level of competitive cost, with considerable scope for further cost reductions, on present costs a large increase in renewables and other low-carbon technologies, would tend to have an adverse effect on competitiveness in the absence of countervailing measures.

(ii) Some measures designed to safeguard security of supply, whether "strategic" (negotiations on Russian gas, interconnectors, LNG terminals etc) or "system" (regulation/market reform, and spare capacity/storage etc) may not have a significant adverse impact on the overall cost of UK energy supply, and are largely neutral in their relationship with Climate Change Policy - except that the "coal option", which has considerable merits in terms of diversity and low strategic risk, gives rise to high CO₂ emissions (unless cost-effective clean coal technology with carbon sequestration can be introduced).

Further implications

9. As noted above, an "active" climate change policy would positively help long-term UK "strategic" security in energy, by diminishing the UK's dependence on imported gas and oil. But clearly there would be very great advantages if such a policy could be pursued in ways which would also be compatible with "system" security and competitiveness. Such an outcome is most likely to be achieved if:

(i) Strong emphasis is given to minimising resource costs of UK energy supply over time, subject to the constraints imposed by Government-determined parameters on emission limits and supply security standards. In other words, we should seek the lowest practicable cost of compliance with these parameters.

(ii) High priority is given to studies designed to:

(a) assess the measures needed to reduce the costs of low-carbon technologies to broad equality with fossil fuels, and the extent to which such an outcome would require more Government (or EU) – funded R&D, as well as the removal of institutional and other barriers.

(b) given the huge fundamental potential synergy between energy conservation and other objectives, identify ways of overcoming market imperfections which impede apparently low-cost savings.

(c) Provide reassurance that any "system" security difficulties with embedded generation and intermittent renewables can be overcome.

10. A further important component concerns the choice of policy instruments to achieve objectives in such a way as to minimise conflict. In this context, the main difficulty usually raised surrounds doubts about reliance on "market forces". This is not a black and white issue, and needs analysis

(i) Competitive energy markets, left to their own devices,

(a) will not recognise external environmental costs

(b) may not provide adequate price signals for investment/ spare capacity etc. required to provide full security of the electricity and gas systems.

(ii) Recognition of these shortcomings in competitive markets in no way invalidates the use of broadly-based economic/market instruments (operating in competitive markets) where this is appropriate. There is a wide range of opinion on the extent to which reliance should be placed on such instruments. In practice, a wide variety of instruments will be required, including economic instruments (permit trading and taxes), and direct regulation (e.g. appliance standards and building regulations). Nevertheless, a major component of energy policy will be to find the optimum balance between the various policy instruments and to ensure that the balance of UK instruments is compatible with those likely to emerge from the EU or other international agreements.

11. We acknowledge that the DTI and others (including the Inter-Departmental Analyst Group) are already considering many of the points made in this note. But the purpose of this note is to highlight those elements most likely to lead to the very desirable goal of overall coherence in energy policy, while recognising the great uncertainty which will inevitably condition the evolution of policy in the decades ahead.

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