

PIU ENERGY REVIEW: SECURITY – INITIAL SCOPING NOTE RESPONSE FROM UNITED UTILITIES

1 Introduction

This note provides an excellent summary of this subject. In particular it makes a correct and relevant distinction that is not often articulated between the elements of security. It poses a number of relevant questions, which have allowed us to discuss the issues in the sections below. We are very conscious of the overlaps with other notes on which we have commented (notably renewables and network issues). We appreciate the challenge that the PIU will face in pulling these various threads together, and hope our comments below are of some help in that process.

2 Background

No questions posed.

3 What is Energy Security?

Question: what is the appropriate balance between emphasis on short-term physical elements of security and longer-term price elements, bearing in mind that as we look further into the future, security seems increasingly to resemble long-term economic objectives?

It is obviously true that both aspects are crucially important. However, given the nature of the current review, it seems more appropriate to focus initially on the longer term issues. This should provide a framework within which short term physical security can be reassessed.

Question: bearing in mind other objectives of energy policy, especially economic (achievement of low costs) and environmental (especially tackling climate change), what priority among policy objectives should be given to the idea of security?

It is difficult to disentangle the various policy objectives. However we believe that the preservation of security is overarching. The availability of sufficient energy to meet consumers' reasonable needs, at costs that are acceptable to society, is now seen as an essential feature of modern life. Even short term energy shortages cause significant social dislocation and disruption, and are often accompanied by painful economic consequences. The Energy Policy Review has rightly been given the scope to address all relevant aspects of government policy, including demand side initiatives that can reduce the extent of dependency on any source of energy to meet society's needs.

Question: what are the weak links in the supply and delivery chains for the different sources of energy?

The pan utility work done on security issues for the millennium was most useful in understanding the interdependence of utilities. It has been observed how the electricity industry is now dependent on gas supplies and the gas network to ensure adequate generation. It is perhaps less obvious how gas in turn depends on electricity for pumping and control, how generation depends also on water supplies, and how

dependent water supplies are on electricity for pumping. The web of control operated across the country by utilities is also dependent on telecoms networks. It is true that many automatic control systems are on dedicated communication circuits that can be expected to remain available in most circumstances that can be imagined. But at time of extreme system stress for utilities there is a hugely increased need for manual intervention and communication and again the reliance on public switched networks for communication is worrying as these communications systems themselves are likely to be severely adversely affected by the event.

Fortunately experience gained for the millennium has shown that there seems to be a level of robustness in utilities' arrangements. Nevertheless the apparent surprise of many commentators to the dependency of the electricity market on the gas industry should be taken as a warning of the need to be vigilant to the growth of any infrastructure dependencies.

Looking specifically at the electricity distribution systems, we believe that in general the networks are in reasonable condition. Network failures of the size and nature of Auckland in 1998 are unlikely in the near to medium future, given the risk management practices in place within network operators. However there is no room for complacency and it is important that the balance between price restraint and support for future investment is kept under review. Over the past decade, the robustness of networks has allowed a regulatory focus on levels of cost, but there is increasing concern that service standards can only be maintained if investment levels are allowed to increase.

Question: security policy is sometimes framed in terms of an insurance analogy: policy may involve the payment of a set of 'risk premiums' in order to guard against a range of possible future events. Is this a useful approach to thinking about security?

At one level this approach is helpful. By converting the assessment of risks into a monetary valuation it becomes possible to compare and rank very different kinds of event. However, there are dangers with the insurance analogy. It is probably true at all levels from the domestic to the macro-economic that insurance understates the total cost of risk insured. A domestic example would be that when a house burns down, the householder receives the pure monetary value of his loss. He is unlikely to be fully compensated for his time, dislocation, or worry associated with recovering from the loss. In this sense, investment designed to reduce the risk of an event occurring is quite different from an insurance premium, and will yield greater benefits. Arguments such as these lead to the conclusion that it is generally better to slightly over-engineer a solution, than to leave a greater risk of failure.

Question: if there is a quantifiable framework in which to gain some idea of the 'insurance' benefits of paying a system security insurance premium, but no such framework for making the same calculation in the case of strategic security, how can policy-makers reach conclusions about the right balance of effort to give to insuring against strategic rather than against system risks?

If the desire is to seek ways of making financial comparisons between options, the suggestion above that we look for the costs of mitigating any risk is equally applicable to many strategic security issues. Cost estimation may be difficult, and some decisions may be based on judgement rather than analysis.

Question: is it (a) practical and (b) desirable for there to be different security standards for different consumers? To what extent should energy suppliers be encouraged to offer a range of products with varying degrees of security?

We think that this question is probably only answerable at the system level, ie we cannot see how there can be a differentiation in the longer term provision of energy supplies. As regards the system or network dependent energy supplies, this question is similar to a number raised in the scoping paper on networks, where the concept of monopoly provider is discussed. It is generally not possible, save at a very local level, to offer any distinction in security. Where this offer is made, it is done on the basis that the direct costs will be allocated to the individual customer. We do not envisage that there will be any significant scope for differentiation in the future, whilst networks are used as the delivery vehicle.

4 Why does energy security matter?

Question: do existing, mostly competitive, energy markets deal adequately with risks to energy security?

We are concerned that markets cannot be completely relied upon to reflect the value to society of security of supply. Many security issues need to be dealt with at a community or societal level, whereas markets tend to only reflect individual customer valuations. To the extent that security is a public good, markets will tend to undervalue it. We have also expressed some concern (in our response to the networks note) over the way that markets adjust to changing circumstances. Whilst they will eventually find a new equilibrium, the transition is not necessarily easy, and may involve socially unacceptable consequences.

Having said that, it is clear that the contribution that markets can make will hinge on the design of the market. The failings of the Californian electricity market are now clear, but there is no evidence that the UK market is close to a similar crisis.

Question: are market failures large enough to suggest that existing markets do not provide the 'right' levels of security?

Some market failures would seem to have done that already. We do not think that security can be left entirely to the market. There is a role for government in setting standards, although these should, where possible, then be reflected in market related incentives.

Question: if these market failures are large enough, can we be confident that Government interventions to correct for the failures will generally have the desired results, especially bearing in mind the difficulties of measuring the risk reduction/cost trade-off?

As discussed above, we think that markets will tend to undervalue the risk of failure. Government intervention is likely to be directionally beneficial, but there will inevitably remain judgements over how much more security is appropriate.

5 Strategic Security: Current Issues

Question: to what extent should we be concerned about importing a proportion of our energy needs? Where there is concern about security of supply from a particular set of overseas suppliers, how far should we be concerned with market power (limited number of suppliers) or with political unreliability, or are the two inextricably linked in the cases of, say, gas supply and Middle East OPEC oil supply?

The desirability of importing energy needs to be seen against the alternatives. If by increasing our focus on renewable resources it is possible to reduce dependency on imports at comparable overall costs, such a line should be followed.

6 System Security: Current Issues

Question: is the current regulatory regime for electricity and gas networks, led by OFGEM, adequate to minimise risks of power or gas shortfalls due to inadequate production capacity or network inadequacy?

The present regulatory regime includes the concept of government guidance to Ofgem on social and environmental issues. This provides a vehicle to provide clear policy statements that Ofgem would take into account.

We have discussed above the apparent lack of clear external or internal policy guidance on network sufficiency within Ofgem. The network industries have their own planning standards, often referenced in licences, but these are generally de-facto standards inherited from pre-privatisation practices. That is not to say that these standards are deficient in any way, but it would be helpful to have confirmation that Ofgem believes they are an appropriate basis on which to plan future investment. It is important that future requirements for network resilience are built into investment plans for future price controls, and that remuneration of replacement and new investment can be assured for the full accounting lives of those assets.

7 Policy Approaches to Security: Generic Ideas

Question: is the current regulatory regime for electricity and gas networks, led by OFGEM, adequate to minimise risks of power or gas shortfalls due to inadequate production capacity or network inadequacy?

This is the same question as in Section 6 above.

Question: how far are generic ideas like diversity, robustness and flexibility a useful starting point for analysis of the risks against which security policies are designed to protect

We agree that these concepts have wide and imprecise application. We believe that approaches to security have to take a view on diversity, and that robustness and flexibility are attributes of the system designed to any given level of security and diversity. An overspecified system is always likely to have flexibility and robustness; whereas an inadequate system is always likely to be constrained.

There would be merit in clarifying the meanings of these expressions within the review, and of using such categorisation to help to distinguish between policy objectives and measures to secure them.

8 Specific Policy Approaches

Question: what is the appropriate balance between market-based and more 'political' approaches to security?

We support the use of markets wherever possible to deliver policy goals. However, we do not feel comfortable with markets being left to establish levels of security. A 'political dimension' to any solution is inevitable, although it may be possible to use market related levers to secure the desired outcome.

Question: what is the appropriate balance between instruments and approaches on the supply side and the demand side?

It is difficult to answer this question at this point in the review. We assume that the government will wish to use whichever levers appear likely to be most effective, and would also be looking to achieve a number of objectives which may contribute to the overall position on security.

Question: among all the instruments described, which are the most appropriate in the UK's situation?

See above

Question: is there a risk that government measures to improve security would undermine provision of security by the market, perhaps in the way that insurance might reduce the incentive to avoid risks?

We believe that government measures should bolster any market incentives to provide security rather than undermine it. Our concern is that markets alone will be inadequate, and further measures will be necessary to achieve the robustness that society has come to expect.

Question: what sort of government measures are most likely to add to the security that the market would otherwise have provided?

Here again, it seems premature to offer conclusions on which measures will be most effective. Government needs to take the lead in defining the requirements against which market participants can plan with greater confidence.

9 Cross Cutting Issues, Conflicts and Synergies

Question: how far is it true that pursuit of security and of environmental objectives are synergistic?

We would hope that it is possible to develop a vision for the future that does combine security and environmental benefits. Work on the demand side can clearly help by reducing the need for energy and thus the likelihood of environmental damage from its use. To the extent that locally based renewable generation can be accommodated

within a secure network infrastructure, there should also be supply side benefits from reduced dependence on imported energy and a parallel improvement in the environmental consequences of production. We recognise that such changes are likely to lead to increased investment in network assets, and that these may also have environmental consequences. However, we believe the benefits of shifting to a greener generation base will justify the secondary costs that result.

Question: should we only use security policies that harmonise with environmental objectives compared to those which do not?

The aim should always be to look for harmony if possible, but it seems to be too stringent a restriction to say at this stage that nothing with potentially damaging environmental consequences would ever be done to protect security of supply.

Question: in these three areas, is the net result of market developments to lead to greater or lesser security, or is it impossible to judge

In each case the key issue is the extent to which current arrangements undervalue longer term effects. As the operation of markets (or price controls that try to simulate market effects) put the focus on short term profitability, there is a danger that investment that would be valued in the future is not undertaken, and the research needed to prepare for that future state is also inadequately funded. We think it is important for government to look to right that imbalance by placing additional value on the benefits of reliable, local, environmentally friendly generation and to encourage more active investment in the future of networks to support such changes in energy supply without threatening the reliability of the local delivery mechanism.