

PIU Energy Project –
Initial Scoping Unit on Electricity and Gas Networks (August 2001)

1. Introduction

I am responding on behalf of GPU Power UK to the above paper. Although I acknowledge that comments were requested by 10 September I understand from discussions with the PIU team that you will accept late submissions up until the first week of October. I trust therefore that you will be able to take note of our comments.

GPU Power UK is predominantly an electricity distributor and as such our comments are largely confined to issues directly related to electricity networks and the obligations and responsibilities of a DNO.

We very much welcome the PIU initiative to review the course of UK energy policy as we move into the 21st Century. Whilst much of the talk to date has been around security of supply issues as they relate to the adequacy of generation capacity in the light of the Californian crisis or the diversity of fuel sources together with the associated environmental policies, there are, as you acknowledge in your paper, a large number of network related issues which are also important for the longer term. Some of these are closely associated with the environmental and security of supply issues above; others are more specific to the development of networks into the longer term and relate to their future role, and the associated regulatory framework which will be put in place to incentivise companies to fulfil their responsibilities in the new energy market place.

2. The Role of the DNO

Successive price reviews since 1990 have incentivised the distribution businesses of the old Area Electricity Boards to reduce their levels of operating expenditure to very low levels. Many benefits have been derived from such policies particularly for customers who have seen prices halved in real terms since 1990. Service levels in terms of customer interruptions or 'minutes lost' have been improving, thus painting a virtuous picture of falling prices and rising service which on the face of it is difficult to do other than applaud.

As far as the operating practices of the DNOs are concerned, the consequences of the RPI-X regulatory framework and its application by successive regulators since 1995 has meant that assets are now being maintained less and replaced less often; plant, equipment and human resources are being asked to work far harder than in the past to deliver the financial and service targets required of them and consequently are less able to respond in an emergency. At the last DPCR in 1998/99 we warned Callum McCarthy that we were becoming increasingly concerned that his proposals were making us adopt a far more short-term perspective to operating the business, and the network in particular, than we felt was appropriate. Indeed we expressed our concern that in certain areas we were being forced to operate plant at an intensity of which we had no previous experience, in order to meet the targets which were being set for us.

In view of such concerns, we welcomed Ofgem's proposals to develop an Information and Incentives Project which promised to redress the balance of incentives between reducing operational expenditure and delivering-appropriate levels of service, as well as to monitor the medium term integrity of the networks being operated by the DNOs. This work has still got a long way to go and to date has not addressed this medium term question in any depth. Your paper, therefore, is very timely.

How we perceive the future role of our national energy (and other) network infrastructures is integral to the security of supply debate. Presently an electricity distribution network is essentially a passive vehicle through which to deliver electricity to final consumers. However, this may not always be the case. Under the Utilities Act 2000 the obligations of DNOs have been extended to include the facilitation of competition in supply and generation. Taken together with the prospect of increased levels of new, possibly renewable, generation being connected to distribution networks may require a change in the operating responsibilities of DNOs towards a more active system operator role in order to facilitate the development of such generating capacity.

If the role of the DNOs expand to become facilitators of the sort of wider development in the energy market which are expected, the regulatory framework which is applied to it will need to change to reflect this. The incentives to which the DNOs will be subject should be consistent with this wider role and the longer-term energy policy objectives for the UK. This may mean a move away from the simple application of the RPI-X methodology towards something more complex encompassing incentives for both short and longer-term efficiency and service

level performance.

3. Role of the Regulator

The PIU project including this particular scoping note raises the prospect of a fundamental re-definition of the role of the energy regulator within the Government Energy Policy framework. By statute, the electricity and gas regulatory authority has a number of key duties which essentially define its role as an independent economic regulatory authority. In the gas and electricity industries this has resulted in significant increases in competition in many of the activities previously dominated by monopoly incumbents and a large reduction in costs and prices to final consumers.

Looking ahead there is now an obvious need to consider whether such an approach will be compatible with the achievements of the Government's longer-term policy for energy. Specifically, if a number of market failures are seen to exist as barriers to the achievement of these Government objectives, then alternative approaches which take account of and seek to remedy these failures will be needed, probably driven by Government.

This could lead to the role of the economic regulator becoming subordinated to the role of Government or other agencies. Already Ofwat, in the case of the Environment Agency and Transco in respect of the HSE, have had their 'regulator's' price controls modified to take account of environmental or security issues not capable of being accommodated within the sector regulators' duties and responsibilities. Such a trend could continue if electricity network security is deemed inadequate for the medium-term or requires modification to accept greater levels of embedded generation for environmental purposes.

It is important that this potential change in the governance of UK energy policy is considered within the framework of the PIU project. It is with some concern that we noted in Ofgem's draft three year corporate plan that they seemed intent to continue forward on a 'business as usual' basis. We therefore urged them in our comments to conduct a fundamental review of their roles and responsibilities and the consequent projects which they were to pursue over the next three years in view of these likely developments in the UK energy market.

4. General Background

'Is the concept of a natural monopoly a useful one to apply to these networks? Is it likely to remain so for the foreseeable future?'

Given present technology and understanding electricity and gas networks will inevitably be 'local' monopolies with all the market power and therefore relatively low risk profile which are associated with such features. However, there may be opportunities for new network operators to develop smaller local network infrastructures on greenfield sites or even where major redevelopments are taking place. If issues related to the obligations of these new network operators, particularly in relation to making available to their final customers a choice of supplier, can be resolved then such developments may become more widespread.

However, this may be less pronounced if the role of licensed DNOs became more complex and their obligations are correspondingly increased.

‘Is it appropriate to apply Common Carriage access to the main networks and NTPA to other wires and pipelines?’

The separation of the RECs’ supply and distribution businesses during the last few years and its formalisation in the Utilities Act 2000 which provides both for separate licences for these activities from 1 October 2001 is the culmination of the UK’s move towards a Common Carriage system for DNOs. Such an approach simplifies the arrangements for supply competition whereby DNOs can be independent facilitators of supply competition; a point that also applies in the case of providing access to new embedded generators. Whilst the distinction between the owner and user of the system is clear under CC, there may be considered to be insufficient incentives on DNOs both to price and perhaps invest in an economically efficient manner, which could be achieved under a NTPA approach.

5. Key Issues for Network Regulation

‘Is it appropriate that, where practicable, network users should pay different prices depending upon the costs they impose on the networks?’

In principle the answer to the question is ‘yes’ – cost reflective prices paid by users of the network should ensure that resources are allocated efficiently within the market and consumption and investment are not restricted or excessive. However, two other elements are important to consider – first the practicality of charging at a disaggregated level to which the question refers; the second consideration relates to the quality of service within a network particularly the range of service experienced by users on different parts of the network.

Presently, locational signals in DUoS charging are given only when a new connection is established whether it be for demand or generation customers; UoS charges vary only by voltage not locality. In respect of their smaller customers, suppliers are usually charged on a per unit basis in order to recover the costs of the capacity provided for them – this is not strictly cost reflective but the present costs of metering demand levels for such customers would not be economic.

Indeed, metering, or at least the provision and maintenance of the meter itself is charged to suppliers separately from the network usage tariff, although it is likely to remain part of the distribution price control until at least 2004/05. This partial separation has caused a huge range of metering prices to emerge in the market place and it is uncertain on what costs they are being priced to reflect. It is paramount that Ofgem resolves the present treatment of metering within the distribution price control by separating the assets from the RAB at replacement cost (and enabling the recovery of stranded costs within the network revenue allowance) and identifying the efficient cost of meter maintenance. This should enable a proper market to develop into the future and encourage innovation in metering technology.

Disaggregating price by location also raises the question of the quality of service enjoyed by different users on the network. Presently, expensive-to-serve rural customers pay the same as their urban counterparts who enjoy a far superior service. How therefore should we reconcile this on an economic basis?

In principle, each customer's quality of supply should reflect their willingness to pay for the service and the costs of delivering that service. Unfortunately, the costs of serving some rural customers is prohibitive and the 'economic' quality of supply for such customers may be wholly unsatisfactory from a social welfare perspective. Such an example of 'market failure' is accommodated within the present cross-subsidy inherent in the common tariffs, which to some extent is validated by the duty of the Regulator to have 'regard to the interests of individuals residing in rural areas'. Whether the extent of the cross subsidy and its relationship to the quality of supply enjoyed by different groups has ever been considered in detail by Ofgem is doubtful although work on a multiple interruption GS may begin to address the issue alongside the IIP.

'Are the approaches used by Ofgem to tackle information asymmetry between regulator and regulatee appropriate? Are there better ones?'

After over 10 years of price regulation there has clearly been a significant reduction in the degree of information asymmetry between Ofgem and the companies. This trend will be reinforced by Ofgem's revised requirements for companies to publish new information of both a financial and technical nature, as part of their Information and Incentives Project. (IIP).

As the paper points out, Ofgem has also used comparative analysis to aid their understanding of the relative efficiency of companies. Whilst this is understandable, we have been concerned that Ofgem is placing too much reliance on such comparative data without acknowledging the inherent and inherited differences in DNO networks which will greatly influence both their cost structure and service level performance. A more detailed understanding by both the Regulator and the companies, of the key drivers of cost and service performance and their interaction with different network configurations is an essential pre-requisite to the greater use of such comparative data both to target companies and eventually attach penalties or rewards to their performance.

'Is Ofgem striking the right balance between seeking cost (and hence price) reduction and investment and maintenance of the quality of service. If not, what are the implications for the approach to network regulation?'

One of the key objectives of Ofgem's IIP is to redress the balance of incentives between reducing costs and improving quality of supply. This is to be welcomed. In assessing company performance on quality the data needs to be adjusted to exclude the effect of severe weather conditions, or any other event outside the control of the DNO. To include such factors would make the achievement of service levels and hence the application of penalties /rewards for company performance, a lottery.

What is important in looking forward to the conclusion of the IIP is the need to link cost and service performance; to date in past price control reviews relative costs (as well as prices) have been largely considered independently of service performance which, of course, will bias the conclusion. In the future, the two should be inextricably linked via a customer's willingness to pay function which could then seek to establish optimum levels of service for each type of DNO network. This balancing of cost and service quality within an RPI-X framework, subject to a five yearly review, may still not be sufficient to ensure the satisfactory medium term development of the network. There may therefore need to be a further tranche of measures/incentives to ensure that decisions taken by companies recognise the importance of the medium term rather than simply achieving short-term targets set for them at each Review. In para 4.6 the paper refers to the make-up of the DNO's RAB and the associated risk of stranding long life assets if the regulator disallows certain investments. As discussed above, the separation of metering from the price control runs the risk of stranding the value of metering assets if they are not valued (or the RAB is not reduced) by the replacement cost of the meters.

Another aspect of the regulatory framework which requires examination concerns the relative incentives upon companies to save opex and capex. Presently, the reward from saving opex far outweighs that for capex. In the future, the concept of crediting the RAB for a given period to reflect efficiencies in capital expenditure will to some extent correct this imbalance and reduce the effect of the timing of efficiency improvements during a price control period.

In order to fund the capital requirements of DNOs the depreciation of the RAB, particularly in relation to pre-vesting assets, has been accelerated such that there is becoming an increased difference between the size of the RAB and the CCA value of the assets, with the result that we are increasingly maintaining assets on the network for which we are not able to make a return. In the future, the need for further investment may necessitate further 'acceleration' or perhaps a change in approach towards 'pay as you go' financing of investment. This will have fundamental implications for the future value of the RAB on which the DNOs' return is based and further will serve to blur the distinction between capex and opex.

'Is Ofgem's approach to measuring quality in terms of numbers and duration of involuntary interruptions appropriate?'

[I presume involuntary interruption are those not 'requested' by customers rather than those unplanned by DNOs – if it were the latter, then it is incorrect since planned interruptions are included in the quality of service measures].

These two measures are the key short-term measures but it must be remembered that:

- the targets apply to the overall network. Hence there is an incentive for companies to choose the most economically efficient measures to effect improvements in performance which in many cases is likely to mean improving further the already best served customers' quality of supply rather

than those who experience several interruptions per annum. The discussion above concerning the costs and benefits of enhancing quality on different parts of the network is relevant here.

- They do not address longer-term considerations; for example, including planned interruptions reduces the incentive for DNOs to undertake certain maintenance projects.
- The ability of DNOs to measure accurately their performance on both CMLs and interruptions remains very limited with consequences both for performance assessment and the application of rewards and fines under the IIP. Ofgem is seeking to address this issue but significant improvement is unlikely within the next eighteen months or so. Consequently, it would be unwise of Ofgem to seek to apply their IIP penalty regime before there has been a discernible improvement in data quality.

‘Are the recommendations of the Working Group consistent with a general approach of cost reflective pricing for networks?’

The alternative arrangements suggested by the EGWG in their recommendations cover possibilities which may be cost reflective and ones which may not be. It is important that the further work identifies which of the alternatives meet this criteria. Cost reflectivity is a constraint which Distributors rightly operate within. It is possible that in order to achieve government targets for embedded generation, inherent cross subsidies within pricing structures may be required. If these are considered then these should be transparent and expressly permitted.

‘Do they address the key problems identified with embedded generation?’

The work of the EGWG was limited to network issues and within this brief we believe it has identified all the key issues with embedded generation. It is clear, however, that there are other equal or greater problems affecting embedded generation beyond network issues. Significant ones include NETA and planning issues.

‘Is reform of distribution network regulation the most important network issue at present?’

A distribution network covers many functions. As the energy market changes then so does the role of the electricity network. The role of the network must be considered in a wider sense of which embedded generation is only one part. This reform of role must be defined before the distribution network regulation can take place.

6. Networks & Security

‘Should consumers of all kinds be given further encouragement to consider their own security requirements, and if so, how?’

The present level of security of supply is high for the vast majority of customers – where it is less good DNOs are being incentivised to improve it through the setting of a multiple interruption Guaranteed Standard. As described before, this will often involve uneconomic investments which the market could not ordinarily support.

It is only likely to be larger customers where the value of the lost supply is greatest where alternative sources of supply are considered economic and necessary or improved security is arranged with the local DNO via a higher connection charge. It would seem unnecessary therefore to consider further intervention of this kind for these customers.

‘Is there a risk that current and proposed regulatory approaches would lead to inadequate investment in networks. If so, why and what is the appropriate means of securing adequate investment?’

We have discussed above the risk that the traditional RPI-X approach to regulation, even if it is supplemented by quality targets will be insufficient to ensure that the required investment will be forthcoming.

We warned Callum McCarthy during our DPCR3 discussions that a low cost of capital, such as 6.5% real, allied to the perceived risks of operating a regulated electricity distribution business was inadequate and would deter prospective investors. Indeed, the amount of money investors could expect would amount to only £20m over and above what a bank might expect – yet the operating regime would be subject to risks from IIP penalties up to £5m from 2002 and Utilities Act fines of up to £25m. Furthermore, the uncertain regulatory framework allied to the prospect of income levels being dependent upon performance measured relative to other companies rather than own-performance compounds this already difficult situation.

‘Is there a case for a deliberate regulatory policy to encourage over-sizing of networks on precautionary grounds? If so, how should this be done, to what extent and who should bear the costs?’

As discussed above, we have had concerns that DPCR3 has meant that companies have had to make decisions with a short-term focus in order to satisfy or outperform Ofgem’s cost allowances at the expense of the longer-term. An essential part of this decision-making process concerns the timing of maintenance and replacement schedules assess via risk management techniques. We would certainly welcome a simultaneous loosening of our opex and capex allowances to facilitate a more prudent replacement policy than we are presently operating. It should not be forgotten that customers presently pay only £55 or so per annum for

use of system; a significant increase in our capex allowance, of say, 50% in one year, would only add about 5p per week to prices to suppliers.

Of course, if the role of the DNO is to be extended beyond that of an essentially passive distributor of electricity to end-customers to, say, a facilitator of embedded generation then the concept of a low-cost intensively operated network will require re-consideration. The question of who bears the costs of any such investment should be determined wherever possible by the market; however, if the market does not deliver the environmental objectives set by Government, say for renewable/embedded generation some form of intervention may be necessary.

‘Is uncertainty created by regulatory changes currently being considered causing medium term security risks? If so how can these risks best be dealt with.’

The most important failure in the present regulatory framework is the present lack of one. Decisions are having to be taken in a vacuum uncertain of how they will be treated at the next Review. We have raised the issue with Ofgem who have promised to address the issue early in 2002. However, under the present arrangements it may be difficult to reconcile the five yearly price control reviews with a stable regulatory framework which encourages the development of networks over the longer-term.

6. Networks and the Environment

‘Should network access and trading arrangements be ‘technology blind’? If not, why not and how could environmental considerations be incorporated in a fair and transparent manner?’

In principle cost reflective access charging should indeed be ‘technology blind’ – however, if there are significant social or environmental externalities involved in the use of different technology which the market does not properly reflect, then there may be a case for charging access to reflect this. Ideally, if this approach is pursued it will be important to seek to achieve it via economic instruments in order to minimise the allocative inefficiencies which may result.

7. Longer Term Network Charges

Many of the developments referred to in Section 7 of your paper have been discussed above, although they do go far further than we have suggested is possible in the foreseeable future. It is important that the possibility of a scenario is at least considered in the Policy Review to 2050, but presently it is difficult to comment upon it in any detail.

What is certain, however, is that the commercial and regulatory framework for network operations would need to change radically – particularly in respect of the duties and responsibilities of DNOs and the incentives under which they would be required to operate.

Yours sincerely

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