Electricity Distribution Price Control Review: Second Ofgem Consultation

Response from

Dr. Jim Watson
Environment and Energy Programme, SPRU,
Freeman Centre, University of Sussex, Brighton, BN1 9QE
Tel. 01273 873539 Email. w.j.watson@sussex.ac.uk

10th February 2004

This response focuses in particular on the proposals set out in Chapter 5 of the consultation document to establish an Innovation Funding Incentive (IFI) and Registered Power Zones (RPZs). It has been developed following the author's participation in the workshop on the IFI and RPZ that was held at the IEE in London on 29th January 2004. In general the proposals for an IFI and for establishing RPZs are to be welcomed. They are a timely first step to revitalise R&D within the electricity distribution companies at a time when they are being required to fundamentally change their networks to absorb increasing amounts of distributed generation. They will also help to increase Distribution Network Operator (DNO) R&D expenditure from the current low levels towards the national and international average.

It is clear from the consultation document and the workshop that the IFI and RPZ schemes will only be approved if it can be shown that they will be cost effective for consumers. Ofgem have particularly asked for examples the quantitative financial benefits that might be achieved if IFI and RPZ were implemented.

This response sets out some of the most important rationales for establishing the IFI and RPZs. It does so largely in a qualitative way since the author does not have direct experience of the quantitative benefits of specific innovations in electricity distribution. The rationales for the IFI and RPZs broadly fall into two categories:

- General rationales that stem from the objectives of government energy, environmental and economic policy; and
- Specific rationales that focus on improvements in the performance of DNOs which bring direct benefits to consumers.

According to Ofgem, the second set of rationales is likely to carry more weight in decisions to approve the IFI and RPZ schemes. Whilst this might be the case, it is important that general rationales are taken into account in any decision making process since they are reflected in the government's environmental and social guidance to Ofgem.

General Rationales for the IFI and RPZs

General rationales for publicly funded R&D and other forms of innovation support tend to focus on the issue of market failure. In its recent Economics Paper No.7[1], the DTI sets out the kinds of market failure that justify some form of intervention. These include market failures

[1] Department of Trade and Industry Competing in the Global Economy – The Innovation Challenge DTI Economics Paper No.7, November 2003.

due to public goods (in which the consumption of a good or service cannot be restricted), externalities (in which returns from an investment cannot be captured by private firms) and uncertainty (in which long term returns are difficult to assess).

Both the IFI and RPZ schemes can be justified by observing a number of market failures such as these. The externalities failure is particularly important since DNOs are being asked to innovate in order to absorb increasing numbers of distributed renewable and combined heat and power plants. These technologies are being supported by the government to meet national policy objectives, particularly with respect to climate change. Therefore, the benefits of innovation to integrate these technologies into networks will be national and global as well as specific to DNOs and consumers.

In addition to this, the IFI and RPZ schemes can be justified on uncertainty grounds. The absence of a significant R&D function within many DNOs means that any decisions to innovate are particularly uncertain. The capacity to decide which technologies and innovations to support (e.g. in the form of trained staff) within DNOs is therefore weak.

A further rationale of this general nature stems from the fact that distribution networks are still regarded as a natural monopoly. Access to these networks on fair terms is required by both generators and suppliers of electricity. If generators and suppliers require these networks to operate in new ways, there is a clear case for some form of government support for innovation to facilitate this transition.

To compensate for market failures such as these, the government has a number of policy options to consider. These are also set out briefly in Economics Paper No.7. The most immediate is public R&D spending in a particular area such as renewable energy or biotechnology. However, there are others that may be alternatives or complements to public R&D support. These include the modification of rules governing competition and regulation in a particular industry, the funding of education and basic research, the use of taxation, and changes in public procurement policies. The IFI and RPZ schemes illustrate how one of these alternatives might be used – in this case, the government (through Ofgem) is seeking to promote innovation by changing regulatory rules instead of providing direct R&D support.

Specific Rationales for the IFI and RPZs

A number of specific rationales for the IFI and RPZs were discussed or raised in the recent Ofgem workshop. Some of the most convincing ones that justify the establishment of these new mechanisms are as follows:

First, the RPI-X formula increases the risk of market failures due to uncertainty. Whilst RPI-X might have succeeded in terms of reducing DNO costs, this mechanism is unsuitable by itself for promoting innovation. This is particularly the case if this innovation has paybacks that are longer than a couple of years. RPI-X encourages a conservative 'business as usual' approach that needs to change. If there is no prospect of fundamental change to the RPI-X approach, the next best option is to establish countervailing incentives such as the proposed IFI/RPZ schemes to selectively encourage more long term innovative thinking.

Second, the lack of significant R&D capacity within DNOs means that some kind of incentive is required to 'kick-start' this activity. Any future consumer benefits from innovation will depend on DNOs having sufficient capacity within their organisations. This is

required even if most R&D (in the case of the IFI) were to be carried out by third party research organisations. New staff will have to be recruited, and new management systems and facilities may have to be developed. This suggests that, at least in the initial price control period, the IFI should have a cost pass through of 100%. However, it might be the case that different levels of incentive should be used if IFI and RPZ projects are collaborative rather than pursued by just one DNO.

Third, some IFI/RPZ activities might have wider spin-offs for consumers. For example, it is likely that innovation in communication and control technologies will be required to move distribution networks from a passive to an active mode of operation. The diffusion of these technologies within distribution networks could open up new service possibilities. These might include access to time of day pricing for consumers. It could also allow distribution companies or supply companies to use the 'virtual storage' of electricity through the management of loads.

Fourth, innovation could defer the expenditure required to renew DNO assets by extending asset lives (e.g. through improved maintenance regimes). This could have direct consumer benefits in two ways – by reducing the net present value of asset renewal (through discounting) and by allowing more time for cheaper alternatives to be developed.