

Innovation and Registered Power Zones.

Innogy's response to Ofgem's discussion paper, published July 2003.

This submission represents the views of Innogy plc and its affected subsidiary companies.

Introduction

We are supportive of an initiative to encourage innovation of the Distribution Network that will lead to efficiencies, and an improved capacity to connect distributed generation. In particular we would welcome initiatives leading to the development of active network management. Our main concern is that sufficient incentives are adopted to realise the benefits of this innovation through to implementation; whilst ensuring best value from approved expenditure and preserving existing generator rights.

Innovation

If we are to meet UK Government targets for renewable electricity generation and cogeneration plant capacity without incurring excessive expenditure on the reinforcement of the distribution networks, then significant innovative development will be required. This should incorporate both technical development of the equipment available and more importantly achieve short term improvements in the utilization of existing infrastructure. Developments in methods of assessing distribution system performance and in processes and procedures employed in the planning, design, operation and maintenance of distribution systems must also be researched.

Innovation not only concerns new available technologies but a much fuller understanding of the commercial risks involved in changing the regime under which the network operates. Only with this understanding will real progress be made in fully utilising the capacity of the existing network. We agree with Ofgem's view that there is considerable capacity which could be made available with little further hardware investment via active network management. Harnessing this will require considerable changes in operational approaches and the DNO's view of the risk/reward balance. It is our view that the use of post-fault constraint management, as opposed to pre-fault constraints on embedded generation, would relieve a significant amount of the current network congestion.

The historic response of the DNOs to regulatory pressures has been to become extremely risk averse. The use of deterministic procedural approaches is the established norm. Consequently there is a lack of both risk management capability and innovative skills. This is now an organisational cultural problem, which Ofgem must address as part of the package of incentives within the forthcoming Distribution Price Control Review (DPCR).

The Innovation Funding Initiative (IFI) is an appropriate tool for encouraging the necessary cultural change, provided that the balance between providing adequate incentives and protecting customer's interests is maintained. To this end we believe that prior to commencement each project should be assessed against agreed criteria to provide a risk assessment and establish the appropriate return. This process should be fulfilled either by the DNO as part of a risk assessment paper or via a panel to be chaired by Ofgem. A public central "register" should be maintained of all work being carried out under the IFI.

The analysis of risk against innovation phase (epitomised in the diagram on page 5 of the consultation) is correct. At each stage there should be a requirement for comparison against measurable output criteria before further funding is released.

To this end, both the input and output incentives should be established as part of the DCRP.

One would expect that DNOs successfully developing new innovations will be early adopters in order to gain additional advantage. Any DNO failing to adopt successful new developments would and should be penalised through the Price Control. Providing that DPCR do not recover benefits too quickly, this should provide incentives to the DNOs to undertake focused R&D. Failed projects should be seen by both DNOs and customers as lost opportunities.

In addition the focus should not only address new technology, but should also address commercial risk/reward assessments in respect to operational and planning standards that would allow for greater network utilisation.

The key factor for the operation of this initiative is the application of sufficient incentives to ensure that effective developments are disseminated and implemented by all of the DNOs.

Drivers should be established to encourage DNOs to cooperate in collaborative work on IFI funded projects. Collaboration could be with other DNOs and NGT, manufacturers, generators, Universities, research organisation and funding bodies such as DTI, EPSRC and EU. Provision must be made to remunerate these third parties, to incentivise their involvement

Although intellectual property rights need to be respected, it is important that they do not impede the reasonable and rapid general implementation of effective developments. To this end, we would support the proposal that intellectual property rights are held outside of the DNOs, with a mechanism to permit a share in the benefits where appropriate.

We have concerns that dissemination of funding across all DNOs will inhibit the potential for radical innovation. Some process for central funding is required to operate alongside the DNO specific funding, which is likely to achieve only small, incremental innovation. This could be utilised to extend existing research networks, including trade associations and the EPSRC ESR21 Network, and/or the establishment of new networks to support research into electricity distribution in the UK. Research bodies such as EA Technology and ERA and learned bodies such as CIGRE UK and IEE will be supportive. Appropriate founding and membership fees for such networks need to be allowed within IFI funding. Such networks should encourage establishment of collaborative research projects, joint exploitation

programmes, means of dissemination and agreement on standards for implementation of newly proven innovations.

The customer needs to realise that benefits from innovation are not necessarily better quality of supply but achievement of Government targets promoting the long term improvement to the environment. This should be realised in time and from commercial indicators.

Registered Power Zones

Registered Power Zones are the opportunity for demonstration of innovative new developments, particularly those of a system or integration nature. Such zones are unnecessary for demonstration of specific new pieces of equipment. We envisage that they will also be used to investigate the effects of different operational approaches and to establish data to allow better assessment of risk for example the application of intertripping or the control of fault contribution. We believe that utilisation of the existing network capacity with the application of already developed technology; especially control technology is the only way that DG connection target can be met in the shorter term.

However, we do not agree with the argument given in paragraph 3.7 of the consultation that states "all generators in the DNO area should share the funding of RPZs....".

It is absolutely essential that the established contractual rights that are secured in relation to investments in long lived generation assets are preserved and that no additional costs are imposed on existing generators as a result of this scheme. Any change to established contractual rights would undermine generator confidence. Our support for this scheme must be on the strict basis that it is funded from either the network related DUoS charges or from a generator or load which chooses to benefit from a specific connection within a RPZ.

We envisage that the materiality of the RPZ's would be very much related to the applicability of the innovation within each RPZ rather than the number of zones being established. As discussed above, this materiality could be significant from a 'quantum leap' type innovation.

Clearly the interests of existing connected parties within the RPZ need to be protected, but most new connected parties should be involved in the "demonstration" and may be willing to incur risks (e.g. in power quality) in return for reduced charges, either for connection or in distribution use of system charges (DUoS). Although one would expect most new connected parties involved in these trials to be generators, we see no reason why new load connections that may benefit from innovative connection approaches should be excluded.

The limitations proposed for RPZs are too prescriptive. Each development should be judged on its own merits and requirements. We suspect that most RPZs would be better defined by a physical node, rather than a geographic area. However to ensure the most innovative proposals, we would support allowing the zones to be defined as appropriate for the planned development programme. There are situations, especially where issues of integration of a number of small generation sources are being addressed, in which 50 MW limit may be a constraint. Why impose this absolute limit? Equally why limit a DNO to three RPZs if it has more useful proposals,

supported by new connection parties? We would suggest that Ofgem minimise the absolute limits imposed on RPZs, whilst indicating factors that might require more extensive justification.

Overall for RPZs, we see the key issue as the incentives and rewards introduced to attract support from new and potential connected parties, as their active support is essential to ensure the success of these developments.