

Innovation and Registered Power Zones

A response by National Grid Transco

Introduction

- 1 In the discussion paper, Ofgem state the objectives for these initiatives are:
 - a. to integrate technical development as part of wider business innovation.
 - b. to deploy new technologies where this enables distributed generation to be integrated more effectively and efficiently to help meet the government's targets for renewables and CHP.
 - c. To signal to potential generators and other interested parties a DNO's development intentions or network capabilities at particular locations.
- 2 National Grid Transco supports these objectives and welcomes this opportunity to contribute to the discussion. As distribution connected generation is a subset (albeit an important one) of the total renewables and CHP that will be required to meet Government's targets, we believe it is important to consider the issues presented in the discussion paper in the wider context of generation and network development.

Incentives and Innovation Process

- 3 The discussion paper outlines a model of the generic innovation process, from research, through development and demonstration to adoption as a proven solution. The paper proposes various enhancements to the incentives on network companies to undertake activities in the different phases of this model. However, the paper does not explain why such enhancements are necessary or efficient, except to note, "*special treatment may be appropriate where a DNO is pursuing new technologies and connection solutions and is operating in an environment exposed to higher risks than its core business*". We suggest that it is not the relative risk that is the issue but the particular constraints imposed by the regulatory regime.
- 4 An unregulated company, contemplating the resources it should commit to different phases of the research and development process, would face a similar profile of probability of success as that used to illustrate the risks faced by a DNO in the discussion paper. Such an unregulated company would decide actions on the basis of the benefits that would be expected to accrue to it, i.e. reflecting the cumulative probability that an innovation would succeed and the timescale over which savings would accrue. The reason that regulated companies can not undertake such appraisals in the same way is due to the fact that potential future benefits may well accrue in future price control periods and so be passed to customers directly rather than shareholders who are being asked to fund the innovation activity.

- 5 The enhancements to incentives for DNOs to undertake innovation activities may therefore be understood as mechanisms for customers to share in the cost of undertaking innovations (in one price control period) so that they may benefit from the outcomes in future price control periods. Many of the questions that Ofgem raise can be seen to be about the appropriate sharing of costs and benefits between DNOs and customers.

Intellectual Property Rights – Question 1 refers

- 6 Ofgem state that it is not seeking to incentivise DNOs to pursue the acquisition and retention of intellectual property rights. Rather the intention is to seek the rapid dissemination of solutions to all DNOs. This means that such innovations are unlikely to provide a particular DNO any benefit in terms of an ability to out-perform regulatory targets set on the basis of an efficient frontier of its peer group. In this way the Innovation Funding Incentive does not provide new incentives to invest although it may provide additional customer revenues to undertake innovation activities.
- 7 Ofgem's suggested approach with respect to intellectual property and information dissemination is consistent with DNOs acting primarily as agents managing innovation on behalf of customers rather than as investors in innovation themselves (since without a mechanism for capturing the benefits of an investment there is no incentive to undertake the investment).

Rationale for Innovation Funding Incentive – Question 2 refers

- 8 Ofgem states that it considers it to be in customer's interest for the DNOs to invest appropriate resources in technology development activities. However, as noted above, while the IFI provides a revenue stream from customers to undertake innovation activities, it does not specifically address the barrier to investment arising from price controls and so is likely to have only weak inventive properties.
- 9 The performance requirements on which this funding is conditional would appear to be consistent with seeking sensible actions by a DNO acting as an agent for customers.

Intensity of R&D – Question3 refers

- 10 Given the particular issues affecting R&D in regulated companies, comparison with other companies on the basis of ratios or scoreboards is likely to be problematic. In particular a comparison between the amounts that companies are prepared to invest with the amounts that DNOs should be asked to manage on behalf of customers would not be valid.
- 11 On the basis of the above assessment, NGT believes the amount of customer money that should be targeted at addressing particular technical issues should be decided on a detailed assessment of the benefits that may result rather than a high level comparison with other companies in different financial frameworks.

Innovation categories and sharing factors – Question 4 refers

- 12 Ofgem proposes that DNOs accept different sharing factors on the allowed funding for innovation activities in different areas.
- 13 Given its responsibility to represent the interests of consumers, it is appropriate for Ofgem to specify those areas in which customers would value innovations that may reduce their network costs in future reviews. However, given that the customers that fund the innovation may not be the same customers that benefit from them (e.g. existing customers will fund innovations that may reduce the connection costs of DG customers) there may be a risk of inefficiencies inherent in this approach.
- 14 In terms of the appropriate level of sharing factors, it is not obvious that sharing factors in the range of 50% to 75% will produce the desired result. If DNOs take the view that almost all of the benefits of innovation will occur in future price control periods, or get passed directly to particular customer groups (such as DG), then it is not clear that DNOs will be willing to invest even 25% of the innovation costs.
- 15 NGT suggests the sharing factors need to be determined on the basis of the expected benefits that DNOs will be expected to retain from undertaking innovations. If it is the case that there is negligible expected benefit for DNOs within the associated price control period, the customer funding share may need to be 100%.

Management of innovation activities – Question 5 & 6 refers

- 16 If, as inferred above, the primary role of DNOs under IFI is to manage innovation actions on behalf of customers (rather than on their own behalf) then there is some argument for rewarding DNOs on their effectiveness at managing this activity. In the absence of direct financial exposure for DNOs to the outcome of innovation, however, it is inevitable that rewards for managing innovation spending will necessarily be of a superficial level (i.e. rewarding the existence of an approved process rather than the quality of the particular innovation decisions pursued).

Registered Power Zones – Question 7 refers

- 17 It is NGT's experience that meaningful incentives on network companies to reduce costs can deliver significant benefits to customers. Such benefits arise as a result of managers pursuing innovations, be it new power system technology, information technology or new business practices. Conversely, such incentives ensure that the risks that certain developments may not work are efficiently balanced.
- 18 Incentives for adopting new technology already exist to a substantial extent under the existing RPI-X price control framework. In general, mechanisms that provide additional revenue per unit of DG do not provide new incentives to seek efficiency but, in so far as such payments boost returns, may provide stronger incentives to connect DG.

MW Capacity limits on RPZ – Question 8 refers

- 19 Given that the additional payments for connecting DG in RPZs may substantially boost the incentive to connect DG, potentially at higher cost than otherwise, imposing a limit on the amount of such generation that would attract such payments would be a worthwhile safeguard to inefficient behaviour.

Returns dependent on innovation – Questions 9 -14 refers

- 20 If the price control provides an adequate revenue stream for DG connections and provides an opportunity for out performance through capital efficiency, it is arguable whether there is a benefit for additional revenues in innovation zones.
- 21 On the one hand it could be argued that such additional resources may facilitate solutions that would make future connections more efficient. However, this implies DNOs would only invest in innovation in order to get a return on future connections if they are given additional revenue at this time. While adequate resource is a necessary condition for undertaking an investment, it is the expectation of a suitable return on the investment which is the key factor and this results from being able to keep a share of future savings rather than receiving monies in advance.
- 22 Against allowing high returns is the potential for inefficient decisions if the additional revenue is used to pursue less efficient connections.

Funding of RPZ enhanced returns – Question 15 refers

- 23 If the specific DG customers fund enhanced returns for their connections then they would effectively be investing in innovations to benefit later connectees who will be their competitors. It is unlikely they would wish to do this.
- 24 If Ofgem requires demand customers to fund higher returns for DG connections, they are providing an explicit cross-subsidy for DG.
- 25 These considerations suggest that, as far as is practicable, network connection charges for specific customers should reflect the efficient costs of providing specific connections.

Other mechanisms – Questions 16 and 17

- 26 NGT notes that the IFI and RPZ mechanisms depart significantly from the “Deep SO” mechanisms proposed for NGC and existing for Transco.