

Electricity distribution price control review

Appendix - Further details on the incentive schemes for distributed generation, innovation funding and registered power zones

June 2004 145b/04

Summary

This Appendix sets out further details on the incentive mechanisms for electricity distribution network operators (DNOs) in relation to distributed generation, innovation funding, and registered power zones. The overall frameworks for these mechanisms have been set out in previous consultation documents on the price control review.

Responses to this document should be received by 9 August 2004. They should be sent to:

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1. Distributed Generation Incentive

Introduction

- 1.1. The March 2004 document¹ set out Ofgem's proposals on the DNO incentive mechanism relating to distributed generation (DG) including values for the various parameters.
- 1.2. A summary of the proposals and issues on which views were sought is in Table 1.

Table 1: Proposals and issues for consultation from March 2004 document

| Issue | Proposal | Views invited |
|------------------------------|---|-------------------------------------|
| Pass-through of costs | 80 per cent | |
| Pass-through revenue profile | Annuity approach | Alternative approaches |
| Incentive rate | £1.5/kW/yr locked in for 15 years | £2/kW/yr for SSE-Hydro |
| Eligibility | As costs incurred for pass-through As DG connects for incentive | Whether to include micro-generation |
| Limit on return | Cap at 2x cost of capital; floor at cost of debt | |
| High cost projects | Costs over £200/kW or above standard design funded by DG connection charges | |
| O&M | £1/kW/yr | |
| Stranded assets | Funded by demand when necessary | |
| Definition & reporting | Developing a robust reporting framework | Appropriate arrangements |
| Network access | £0.002/kWh | Practical application |
| Strategic investment | No special treatment to be pursued | |

- 1.3. This section sets out further clarification on how the incentive scheme will work. Ofgem has also developed an initial draft of the Special Licence Conditions which will be required to implement the incentive scheme – these are set out in a separate Appendix.² The reporting arrangements and definitions of relevant terms are set out in a separate document – the draft Regulatory Instructions and

¹ Electricity Distribution Price Control Review: Policy document, Ofgem, March 2004

² "Structure and scope of price control licence modifications", Ofgem, June 2004

Guidance (RIGs) document for DG, registered power zones and innovation funding incentives.³

Views of respondents

- 1.4. All respondents broadly welcomed the introduction of the DG incentive scheme although some concerns and points of clarification were raised about certain aspects of the arrangements.
- 1.5. Some DNOs argued for more protection from the risks they may face under the incentive scheme and a number of suggestions were put forward including a higher incentive rate, application of the incentive rate regardless of whether generators actually utilised any increased network capacity, limit on risks under the network access incentive, and/or higher caps or floors of returns. However, some other respondents, including the Renewable Power Association and Combined Heat & Power Association, believed that the proposed incentives were over-generous to the DNOs.
- 1.6. In specific reference to strategic investments in advance of DG development, some DNOs reiterated their belief that a special treatment should be given, whereas others commented that the hybrid mechanism should be used for all shared and strategic network investment and that speculative investments should not be encouraged.
- 1.7. With regard to the proposed higher incentive rate for SSE-Hydro, a number of respondents agreed with the principle behind the proposal, whilst others wanted reassurance that the higher rate reflects genuine cost differences.
- 1.8. On the question of whether micro-generation should be included in the DG incentive arrangements, the majority of the respondents believed that it should, although a couple of others suggested that costs for connecting micro-generation could be treated as load-related reinforcement in the main price control, subject to a review after 2010.
- 1.9. Some respondents supported the proposed O&M rate at £1/kW/yr. However, others suggested alternatives including: adopting a similar hybrid mechanism as

³ "Regulatory Instructions and Guidance – Distributed Generation Incentive, Innovation Funding Incentive and Registered Power Zones, Version 1 Draft 1", Ofgem, June 2004
Electricity Distribution Price Control Review, Initial proposals, Appendix
Office of Gas and Electricity Markets

for capex, applying the same capitalisation methodology as for demand, or increasing the allowed rate. Some considered it inappropriate to remunerate O&M costs on the basis of the connected DG capacity.

- 1.10. DNOs preferred a RAV approach to the annuity approach for profiling the pass-through revenue, due to the perceived exposure to DG failure, and the potential regulatory complexity.
- 1.11. There was wide support for developing clear definition and robust reporting framework for the implementation of the DG incentives.

Ofgem's further thoughts

The risk-reward balance

- 1.12. It is important that the DG incentive scheme provides an appropriate balance of risk and reward to DNOs – and that payments that companies receive are related to delivery of the output required. At an overall level, DNOs are being provided with protection through a guaranteed level of cost pass-through; the total return that they earn across the portfolio of projects; and the special treatment of high cost projects (see below).
- 1.13. The incentive scheme as currently proposed provides an appropriate balance and no further changes to the overall risk-reward balance will be considered. The operation of the incentive scheme will be reviewed as part of the next price control review at which time it will be appropriate to look again at the risk-reward balance.

Micro-generation

- 1.14. Ofgem accepts that DNOs have some influence over the development of micro-generation and that to exclude it from the DG incentive scheme could be considered discriminatory and could create perverse incentives. **As such, micro-generation will be included within the DG incentive scheme.**

High-cost projects

- 1.15. The proposed threshold defining a 'high cost project' of £200/kW was based on the portfolio of DG project costs as provided by the DNOs. At the current assumed level for the cost of capital, the return for a typical portfolio of DG projects with unit costs under £200/kW is unlikely to fall below the proposed floor assumed at the cost of debt, and therefore projects at £200/kW or lower unit costs are unlikely to require individual special treatment. Once the values of the relevant parameters are finalised, Ofgem will re-examine whether this threshold remains appropriate.
- 1.16. Taking into account the practical implementation of the incentive scheme particularly as micro-generation will be included, Ofgem proposes an additional threshold for an individual total project cost of £100,000. In other words, a project would be treated as high-cost only if both its unit cost and total cost were higher than £200/kW and £100,000 respectively.

O&M costs

- 1.17. The proposed allowance of £1/kW/yr to cover DNOs' O&M costs remains unchanged. A review will be carried out at the end of next price control period and any necessary changes will be considered then to allow for efficient cost levels incurred after 2010 (i.e. the £1/kW allowance is not intended to persist beyond 2010 and will be reset at the next review).

Strategic investment

- 1.18. The hybrid mechanism as it stands provides appropriate incentives to DNOs to respond to requests for connection to their network. The incentive scheme facilitates strategic investment where the DNO is highly confident that it will lead to additional generation and will be cost effective. Where the investment is either more speculative or costly, so that the DNO does not have confidence that the investment will be worthwhile, then the mechanism is not intended to fund these projects.

Ancillary service costs

- 1.19. As the level of DG penetration increases and the management of the distribution networks becomes more active, there may be opportunities for the DNOs to

utilise ancillary services from generation (as well as demand) to help operation of the network. The extent to which these opportunities and associated costs will arise over the next price control period is unlikely to be significant and no explicit allowance has been made. However, if DNOs do incur costs in relation to ancillary services that yield savings in either opex or capex, then to the extent that the savings exceed the costs incurred, the DNOs will benefit.

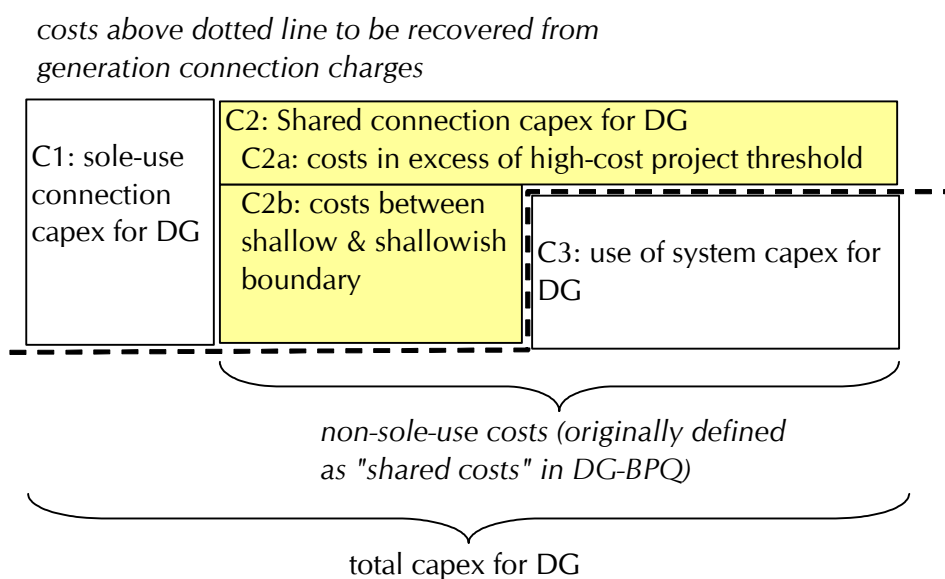
Legal aspects

- 1.20. One DNO has argued that the incentive scheme may not be consistent with relevant legislation. Section 19(1) of the Electricity Act allows DNOs to recover connection expenses to such extent as is reasonable. Currently the recovery of costs on the network infrastructure incurred by DG connection is included in generation connection charges. After the implementation of the incentive scheme, along with the revised charging structure, such costs will be brought into the relevant incentives within the price control. The 'shallow' proportion of the connection costs for both demand and generation, will continue to be recovered via the cost-based connection charges.

Updated connection boundary

- 1.21. The value of the DG incentive rate was originally assessed using information provided by DNOs which assumed a shallow connection boundary, i.e. the costs of all non-sole-use assets were included in the calculation. However, the special treatment of high-cost projects and the adoption of a shallowish connection boundary will result in the allocation of some non-sole-use asset costs to DG connection charges. This change in the allocation of costs between connection and use of system is shown in Figure 1. The shaded area C2 (consisting of C2a and C2b) denotes the costs which were originally to be recovered by use of system charges and were therefore included in the calculation of the incentive. They will now be remunerated via DG connection charges.

Figure 1: Allocation of costs between connection and use of system charges



1.22. Simply applying the pass-through and the original incentive rate on the “use of system capex”, shown as C3 in the diagram, would result in the DNOs being over-paid for the “shared connection capex”, shown as C2 in the diagram (by 20% on average).

1.23. There are two options to avoid the over-payment:

- Option 1 is to adjust the DG incentive rate to cover the use of system capex only. In terms as shown in the diagram above, C3 will be given an 80% pass-through and an updated incentive rate to reflect the reduction of capex included; and
- Option 2 is to keep the original DG incentive to cover the total shared costs but treat the connection charges paying for the shared connection capex as capital contribution towards the allowed revenue. In terms as shown in the diagram above, C2 + C3 will be given an 80% pass-through and the original incentive rate, while the connection charges to recover C2 will be treated as capital contributions.

1.24. Option 1 would require a collection of ex-ante data from the DNOs regarding the split within the total shared costs between the shared connection capex and the use of system capex, and then a re-calculation of the incentive rate(s).

Option 2 would require the DNOs to report this split ex-post. Ofgem’s

preference is to use Option 2 and this is reflected in the draft licence condition and the draft RIGs. However, Ofgem will be asking the DNOs to update their forecast of the cost re-allocation according to the shallowish connection boundary and will confirm the option after reviewing such forecasts.

Ongoing incentive for network access

- 1.25. It is appropriate that DNOs are incentivised to provide ongoing network access to DG once it has connected to the network. The incentive should reflect the network availability associated with normal standard design but the arrangements should be flexible to accommodate varying degrees of firmness of individual connection designs as agreed between a DNO and a generator. Further details of Ofgem's proposal are set out below.
- 1.26. The rebate paid by the DNOs for network unavailability will be based on the following formula:

$$\text{Rebate rate} \times \text{DG capacity} \times (\text{network interruption duration} - \text{baseline network interruption duration}),$$

where:

- the rebate rate will have a default value of £0.002/kWh but a different value can be agreed between the DNO and DG;
- the network interruption includes occurrences of a physical break in the distribution circuit between DG and the rest of system which prevents the DG from exporting power. It will exclude 50 per cent of pre-arranged outages⁴ of distribution equipment for which statutory notification has been given to the DG, and other exemptions as allowed in the quality of service incentive and as agreed between the DNO and DG; and
- the baseline network interruption duration will have a default value of zero hour but again a different value can be agreed between the DNO and DG.

⁴ Consistent with the arrangements for the quality of service incentive scheme under the main price control. Electricity Distribution Price Control Review, Initial proposals, Appendix
Office of Gas and Electricity Markets

- 1.27. With regard to the need for a limit to the DNOs' risks under this incentive, it is proposed that payments made by the DNOs for network unavailability will be part of the cash flows on which the return will be calculated when applying the cap and collar.
- 1.28. Detailed rebate payment arrangements will be developed as part of the work on distribution charging methodology.

Profiling pass-through revenue

- 1.29. Initial work on licence condition has been based on an annuity approach – which Ofgem still favours. However, further work on assessing the financial impact of the overall price control will help inform the final decision on the approach to be adopted. A decision will be set out in the September document.

Treatment of tax

- 1.30. The proposed DG incentive parameters have been derived using a pre-tax cost of capital. The DG incentive parameters will be adjusted to align with the final cost of capital position under the main price control. In particular, it will be necessary to consider how tax will be treated and whether the tax allowance should be a generic 'tax wedge' or a company specific adjustment. **Views are invited on this issue.**

Summary

- 1.31. Ofgem's proposal on the DG incentive as set out in this Appendix is summarised in Table 2.

Table 2: Summary of Ofgem's proposals

| Issue | Proposal | Views invited |
|------------------------------|--|---|
| Pass-through of costs | 80 per cent | |
| Pass-through revenue profile | Annuity approach; decision in September document | |
| Incentive rate | £1.5/kW/yr (£2/kW/yr for SSE-Hydro); locked in for 15 years | |
| Eligibility | As costs incurred for pass-through As DG connects for incentive; including micro-generation | |
| Limit on return | Cap at 2x cost of capital; floor at cost of debt | |
| High cost projects | Costs over £200/kW and £100,000 or above standard design funded by DG connection charges | |
| O&M | £1/kW/yr | |
| Stranded assets | Funded by demand when necessary | |
| Definition & reporting | Draft Regulatory Instructions and Guidance | |
| Network access | £0.002/kWh, further details to be developed in charging methodology | |
| Strategic investment | No special treatment to be pursued | |
| Updated connection boundary | Ex-post adjustment | |
| Tax treatment | | Appropriate adjustment from post-tax to pre-tax |

2. Innovation Funding Incentive

Introduction

- 2.1. This section sets out the proposed operating rules for the Innovation Funding Incentive (IFI). The reporting arrangements and definitions for the terms required to implement the mechanism will be set out in the Regulatory Instructions and Guidance.

The IFI mechanism

Eligible IFI Project

- 2.2. A project will qualify as an eligible IFI project provided that it is designed to enhance the technical development of distribution networks (up to 132kV) and to deliver benefit (e.g. – financial, supply security and quality, environmental, safety) to end consumers. IFI projects will embrace all aspects of distribution system asset management from design through to construction, commissioning, operation, maintenance and decommissioning. Each eligible IFI project will be justified prior to commitment on the expectation that the Present Value of its costs will be exceeded by the Present Value of the benefits it could deliver to customers. This justification will be published in the IFI Annual Report.
- 2.3. It is accepted that for some IFI projects (e.g. relating to safety management and environmental benefit) it will not be possible to quantify financial benefits. In these exceptional cases a more qualitative approach will be acceptable.

Eligible IFI expenditure

- 2.4. Under the IFI mechanism a licensee will be able to recover a fixed proportion of its eligible IFI expenditure in each relevant year provided that the eligible IFI expenditure does not exceed the IFI cap.
- 2.5. The IFI cap is defined as 0.5% of price control turnover in each relevant year.
- 2.6. The proportions of eligible IFI expenditure that may be recovered via customer charges are as follows.

| Relevant Year | 2005/6 | 2006/7 | 2007/8 | 2008/9 | 2009/10 |
|--------------------------|---------------|---------------|---------------|---------------|----------------|
| Pass-through rate | 90% | 85% | 80% | 75% | 70% |

IFI internal budget

- 2.7. A licensee will be allowed to allocate up to 15% of its eligible IFI expenditure to an IFI internal budget. In the event that a licensee wishes to increase this allocation (up to a maximum of 20%) it will seek Ofgem's consent to do this when it submits its IFI internal budget on the annual budget submission date.

Use it or lose it

- 2.8. It will be an absolute requirement that only monies actually expended on Eligible IFI Projects will be allowed to be passed through, at the rate appropriate to the relevant year, to customers.

Carry forward

- 2.9. In the event that the eligible IFI expenditure in each relevant year is less than the amount specified by the IFI cap the licensee may nominate an IFI carry forward – defined as the difference between the IFI cap and the eligible IFI expenditure. The IFI carry forward cannot exceed 50% of the eligible IFI expenditure in any relevant year.
- 2.10. The IFI carry forward may only be used to increase the eligible IFI expenditure in the year immediately following that in which the carry forward was nominated, i.e. it cannot be carried forward over 2 years. The pass-through rate applying to the IFI carry forward will be that which applied in the year that the carry forward expenditure was incurred.

Innovation good practice guide

- 2.11. A DNO will be required to submit its good practice guide to Ofgem for approval prior to the commitment of any IFI projects. Ofgem will normally confirm its approval or rejection of the guide within four weeks of receipt. In the event that Ofgem does not approve a guide it will give its reasons so that a licensee can amend the guide and gain approval. It would be acceptable for licensees to

develop a common guide in the interests of efficiency and commonality of approach.

Review

- 2.12. Ofgem will carry out a review of the IFI following publication of the second licensee IFI Annual Reports in 2007.

3. Registered Power Zones

Introduction

- 3.1. Set out here are Ofgem's proposals for the operating rules for Registered Power Zones (RPZ). Reporting arrangements and definitions of the terms required to implement this mechanism will be set out in the Regulatory Instructions and Guidance that will support the RPZ.

RPZ application

Defining an RPZ

- 3.2. Each RPZ will be defined as a collection of contiguously connected distribution system assets (i.e. which provide an electrical path for the distribution of electrical energy to consumers) having one or more terminal points which together describe in full the RPZ's boundary with the total system. These terminal points will be selected such that any system components or connected customers (existing demand and generation) that may be affected by the RPZ project are included within them.

Eligible RPZ Project

- 3.3. The eligibility criteria proposed for RPZs are as follows:
- The project must involve the connection of new generation;
 - The project must demonstrate innovation as defined in 3.4;
 - The innovation deployed in the RPZ must be shown to be of value to DG customers;
 - The new generator must be informed of the RPZ application, the innovation involved, the alternative extant connection option, the risks associated with the innovation and any financial or other commercial implications for the generator.

- In the event that the RPZ connection has a commercial/technical impact on the new generator then it must give its consent to the RPZ connection proposal.

Criteria Defining Innovation

3.4. Innovation can be demonstrated in a number of ways:

- **Equipment** – the use of a piece of equipment of genuinely new design could alone constitute material innovation. This would not extend to the incremental development of existing technology. It may be appropriate for more than one RPZ to be justified in relation to a new piece of equipment if the specific application or duty of the equipment was sufficiently different.
- **System design/topology** – an RPZ justification could be made for a novel approach to system design, in particular to increase the utilisation of assets. It is likely that innovation in system design would also require innovation in control and protection.
- **System operation/control** – novel approaches to the operation and control of a distribution system (voltage, power flow, fault level) that facilitate the connection and operation of DG.
- **Supply continuity & quality** - the use of DG to enhance supply continuity and quality and/or offer a novel alternative to the use of traditional network reinforcement to meet licence standards.

Eligible RPZ Expenditure

3.5. The Eligible RPZ Expenditure for an RPZ project will be as specified for all other DG connections under the DG hybrid incentive.

Recovery of Eligible RPZ Expenditure

3.6. The licensee will recover the capital investment of an RPZ according to the rules established for the recovery of all other DG connections. The only difference will be that the £/kW element of the DG hybrid incentive will be set at three times the DG incentive rate for the first five years.

Application & Registration Process

3.7. The main points of the proposed process are as follows:

Proforma application – it is important that all applications are considered against consistent criteria. To assist this process a proforma application form will be developed.

Application timescale – DNOs will be able to apply for RPZ registration from 1 April 2005 to 31 March 2009. An RPZ connection project will have to be commissioned (defined as becoming commercially available under a connection agreement) in the form initially registered with Ofgem between 1 April 2005 and 31 March 2010 to qualify for the RPZ premium.

Registration process – the process will comprise the following steps:

- DNO submission of application to Ofgem – Ofgem acknowledges the application within 10 working days and advises the applicant if the application is complete and therefore valid. If it is complete the application date is registered as the date of receipt by Ofgem. If it is not, the application is deemed invalid until its identified deficiencies are addressed to Ofgem's satisfaction. Ofgem will then confirm the application date.
- Ofgem's consideration of applications – Ofgem will consider each application against published assessment criteria. Where an application is rejected, Ofgem's assessment will be made available to the applicant. Ofgem's assessment will normally be completed in 15 working days. However, if Ofgem considers that the advice of the independent panel is required the applicant will be informed and advised of the additional period required.
- For those projects that are granted RPZ registration, there will be a duty placed on the registrant to inform Ofgem of any change to the RPZ proposal after registration. Ofgem will reserve the right to withdraw registration if in its sole judgement changes made to an RPZ cause the registration criteria to no longer be met.

RPZ independent panel – it will have four members drawn equally from industrial and academic backgrounds. The panel will be chaired by Ofgem.

Affected Customers

- 3.8. A DNO will be required to assess comprehensively the potential impacts that the RPZ proposal could have on customers. Where potential negative impacts are identified, these will be reported via the application for registration. Measures available to mitigate these potential negative impacts will also be identified. Appropriate quality of supply monitoring equipment should be deployed in these situations to ensure that customers' interests are protected.

Innovation Good Practice Guide

- 3.9. A good practice guide for the management of innovation in distribution companies will be submitted to Ofgem for approval prior to the registration of RPZ projects. The guide will include such subjects as project appraisal, value quantification, project management, asset management, budgeting and accounting and reporting.

Standards

- 3.10. The default option in relation to statutory (e.g. the Electricity Safety, Quality and Continuity Regulations) and regulatory standards (e.g. the Engineering Recommendation P2/5 and the Guaranteed Standards of Performance for quality of service) is that they apply in an RPZ as they would elsewhere. If a relaxation of any standard is sought and/or beneficial in connection with the RPZ, the DNO will be required to provide a justification for this. It will be at the sole discretion of the body that governs the standard to decide whether the requested relaxation should be granted. The impact on consumers of any such relaxation will be of paramount importance in the assessment of the case for a relaxation.

Materiality & Risk

- 3.11. The rationale supporting the RPZ premium is that it provides an enhanced return in recognition of the additional risks that the DNO is taking. The actual cost of the innovative component is therefore not necessarily relevant in justifying RPZ registration. Ofgem will require the DNO to identify the risks that it is managing (related specifically to the RPZ proposal) and its associated financial exposure. In a situation where there is doubt that the quality of the innovation justifies the RPZ premium, this information may be relevant in support of the DNO's case.

Review

- 3.12. A review of the RPZ incentive will be carried out in 2007 together with the IFI. This will take place following publication of the 2nd annual reports on the IFI.