

Distribution Price Control Review 4

Business Plan Questionnaire Relating to Distributed Generation (DG-BPQ)

Guidance for Completion

June 2003

Introduction

An important task of the current distribution price control review ("DPCR4") is to develop appropriate incentives for the distribution network operators (DNOs) to connect and provide network access to distributed generation (DG). At the same time, the review will also need to assess the historical and projected future expenditure of the DNOs. As part of these DPCR4 work streams, Ofgem needs to collect from the DNOs information pertinent to their recent activities and future business plans in relation to DG.

This document provides guidance for completion of the business plan questionnaire in relation to DG (DG-BPQ). After setting out the overall objectives and key outputs for work on the DG-BPQ, it provides guidance for completion, both in general and in respect of each table or individual data item, by explaining the rationales for the requests, definition of terms, and formats of answers wherever appropriate.

Objectives & Outputs

The key objectives for Ofgem to collect information under the DG-BPQ are:

- to establish a consistent set of information on past DG-related distribution activities;
- to understand the past and future investment and operational expenditure, decisions and policies in the context of connecting, providing network access to, and utilising DG, including specifically the drivers for the DG-related cost impact on the DNOs; and
- to understand the potential future development of DG and the likely impact on the investment, operation and the efficient level of costs of each DNO.

The information obtained from the DG-BPQ will be used to facilitate the completion of the following:

- setting incentives for the DNOs to support the development of DG in accordance with the Government objectives announced in the recent Energy White Paper;
- projecting investment and operational costs relating to DG for the period of the DPCR4;
- publishing key company-specific historical and forecast financial information to facilitate the consultation process for DPCR4; and
- Ofgem's financial model to determine the impact on the financial position of each DNO arising from the DPCR4 forecasts.

Publication

The publication of historical and forecast financial information is an essential component in performing a transparent price control review so that it is clearly understood by all stakeholders. The publication of information obtained from the completed BPQs will provide fundamental background information to support the development of the incentivisation mechanism in relation to DG as well as the Ofgem financial model and final determination of allowed DPCR4 revenue.

It is Ofgem's intention to publish the relevant DG-BPQ data on the Ofgem website, excluding the written responses and those parts that are confidential. The DNOs should therefore carefully mark as confidential any parts of a response they do not wish to be published and provide justification as to why, in their opinion, the information must remain confidential. Where necessary, information may be presented in publication anonymously or in an aggregated manner.

Correspondence

You are requested to respond to this questionnaire in an electronic format by 10 September 2003.

All correspondence is to be directed to the attention of:

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General Guidance

Instructions for completion

The DG-BPQ consists of the attached Microsoft Excel 2000 spreadsheets. Where appropriate, links, formulas and drop-down lists have been included to limit the amount of manual data entry required. Detailed description of the codes and abbreviations to be used in the data entry and/or drop-down lists is included in the “Codes” sheet. Cells with links or formulas have been shaded. Should you identify link or formula cell errors please forward the relevant spreadsheet to Ofgem for correction. The DNOs may insert rows into some of the tables (2, 3, 4, 6, 7, 8, 12, 13) if they have more data items.

We strongly recommend that you perform appropriate virus scans prior to opening any Microsoft Excel files as Ofgem will not accept responsibility for virus contamination that may arise as a result of this action.

In addition to the completed tables of the DG-BPQ, the DNOs should also provide an accompanying narrative setting out, in general and in specific to any sections and/or data items, further background information, important assumptions underlying the answers, or an explanation for any lack of information.

Printing

A printing function has been established in the ‘Menu’ worksheet to facilitate the printing of specific groupings of spreadsheets.

Structure of DG-BPQ

The DG-BPQ has been separated into the following sections:

Historical DG information: – Requests the presentation of information relating to all DG projects whose full commissioning took place between 1 April 2000 and 31 March 2003.

Interim Period Forecast DG information: – Requests the presentation of information relating to all DG projects that are forecast to be fully commissioned during the interim period of the current price control, ie from 1 April 2003 to 31 March 2005.

Future Forecast DG information: – Requests the presentation of information relating to the future base case scenario of DG that is forecast to be fully commissioned during the next price control period, ie from 1 April 2005 to 31 March 2010.

Key principles & assumptions

This section sets out the key principles and assumptions to be used when completing the DG-BPQ. It also provides an explanation of the meaning of some of the terms used in this DG-BPQ.

Definitions and Accounting Principles

The Regulatory Accounting Guidelines ('RAGs') are to be used as the basis for completing the DG-BPQ except where specifically indicated otherwise. The RAGs, in conjunction with UK Generally Accepted Accounting Principles ('UK GAAP') provide the necessary definitions and accounting principles required to complete the DG-BPQ.

Asset type & quantity

This should include:

- asset category – eg overhead line, underground cable, submarine cable, switchgear, transformer;
- voltage level – in kV/kV for transformers and kV for others;
- capacity – in MVA;
- sub-type – eg SF₆ switch, oil switch etc for switchgear;
- quantity – in km for lines, in numbers for others.

The description of assets should be consistent with those used in Table 13 "Regulated Distribution Business – Asset Age Profile" of the Historical BPQ which was issued in June 2003.

Categories of DG (for Data Aggregation)

The categorisation of DG for the purpose of aggregating the high-level DG-related information is based upon the DG banding as developed by the Technical Steering Group of the Distribution Generation Coordinating Group and is as follows:

<u>Category</u>	<u>Capacity</u>
A	< 1MW
B	> = 1MW, < 12MW
C	> = 12MW, < 50MW
D	> = 50MW, < 100MW
E	> = 100MW, connected at < 132kV
F	> = 100MW, connected at 132kV

DG Project

A DG project represents a standalone scheme involving at least some of the distinct phases of: application from the DG customer, the design and planning work by the DNO, an agreement of connection and charging terms between the DNO to the DG customer. Specifically, an upgrading or expansion of an existing DG plant will be regarded as a separate DG project in the context of this DG-BPQ. For the avoidance of doubt, standby generators that operate in parallel with the distribution system for short periods of time for the purpose of testing only will not be counted as DG in the context of this DG-BPQ. For a scheme which deals with the joint connection of both generation and demand at the same site, then the work and costs reported here should be those that could be avoided if the generation part of the connection did not take place.

Direct cost of work on assets

This is to include all directly attributable costs (in accordance with the requirements of FRS 15 – Tangible Assets) incurred for installing or reinforcing the distribution assets. This would include:

- acquisition costs (including stamp duty, import duties etc);
- site preparation & clearance costs;
- installation costs; and
- professional fees.

Distribution loss factor

The sign convention should be that a positive value means generation increase losses and negative values means reduces losses.

Full commissioning of DG

In the context of this DG-BPQ, this means that all required work on the distribution network has been completed so that the network is capable of accepting full output from the generator.

How DG helps to avoid work on shared assets

For requested format of answer, please see the guidance on “Reason for work (on shared assets)”.

Inflation

All financial information for items relevant for a specific year is to be expressed in nominal terms. For items summed over a number of years, they should be entered as 2002/03 values, indexed by RPI for the past and by an assumed headline & underlying inflation rate of 2.5% from April 2003 onwards.

Operation and maintenance (O&M) costs included in connection charge

O&M represents:

- the estimated total future costs associated with the operation (ie indirectly attributable costs) and maintenance of the DG connection infrastructure; and
- the indirect overhead costs incurred in constructing, maintaining and operating the whole infrastructure required to facilitate the network access to all the distribution customers.

The input is to be entered as a percentage of the total connection costs charged to the DG customer.

Opex saving (in “work avoided on shared assets”)

Enter the net present value at year of DG full commissioning, assuming an annual discount rate of 6.5%.

Reason for work (on shared assets)

The following categories can be entered:

- fault level capacity;
- voltage limits;
- system stability;
- thermal capacity; and
- other.

Where appropriate, the DNOs should supply further details in the accompanying narrative.

Return included in connection charge

This represents the over/under-recovery of costs incurred to construct, operate and maintain the connection for each DG project. It includes any allowance for return on capital / assets employed to complete the connection, as well as the profit (or loss) recorded on the connection project. The input is to be entered as the profit (or loss) in terms of a percentage of the total connection costs charged to the DG customer.

Regulatory arrangements in the next price control

The following common assumptions on the regulatory framework should be adopted when completing the DG-BPQ:

- incentives in relation to distribution losses – as set out in Ofgem’s “Electricity Distribution Losses: Initial Proposals” document (June 2003);
- distribution charging structure – as set out in Ofgem’s “Structure of Electricity Distribution Charges: Initial Conclusions” document (June 2003); and
- incentives in relation to DG – as to be set out in Ofgem’s DPCR initial consultation document (publication expected July 2003).

Sole-use and shared assets

In this DG-BPQ the connection work and costs incurred for DG connection include both installation of new assets and reinforcement of existing assets and should be those directly incurred by the DG project and could be avoided if the DG project did not take place. The connection work and costs are split into two parts using the boundary between connection and use of system charges under the shallower connection charging regime to be adopted from 1 April 2005. As the detailed definition of the boundary for LV and HV connections are yet to be developed, the shallow boundary proposed for EHV connections in the June 2003 Initial Conclusions document should be used for all the DG projects in completing this DG-BPQ. Once the definition of connection boundary is finalised, further high level information may be sought from the DNOs so that overall adjustments may be made to the division of the DG connection costs.

Strategic & overall costs

The following categories can be entered in the reason for incurring such costs:

- general infrastructure;
- research & development;
- planning & design;
- operational & control room; and
- other.

For recurring opex, enter the net present value at year of first incurrence, assuming an annual discount rate of 6.5%. Where appropriate, the DNOs should supply further details in the accompanying narrative.

Total connection charge

For those with annualised charges, enter total equivalent one-off charges (ie before annualisation).

Types of ancillary services

The categories include the following:

- thermal constraints management;
- fault level management;
- voltage management;
- system stability; and
- other.

Where appropriate, the DNOs should supply further details in the accompanying narrative.

Types of DG technology / Fuel

The numbers to be entered in the relevant tables for the technology and/or fuel types of the DG plant are set out as follows:

Type No.	Description
1	Onshore wind
2	Offshore wind
3	Tidal stream & wave power
4	Biomass & energy crops (not CHP)
5	Hydro
6	Landfill gas, sewage gas, biogas (not CHP)
7	Waste incineration (not CHP)
8	Photovoltaic
9	Micro CHP (domestic)
10	Mini CHP (< 1MW)
11	Small CHP (> = 1MW, < 5MW)
12	Medium CHP (> = 5MW, < 50MW)
13	Large CHP (> = 50MW)
14	Other generation

Units

Except where specifically instructed otherwise, all monetary values are to be rounded to the nearest £0.1 million for data items where units of “£m” are shown in the table heading; and to the nearest £0.1 thousand for data items where units of “£k” are shown in the table heading.

Historical DG Information

Introduction

The Historical DG Information section of the DG-BPQ is designed to obtain information on the historical work and costs that the DNOs have incurred in order to connect and provide network access to DG projects whose full commissioning took place between 1 April 2000 and 31 March 2003. It is envisaged that the information collected in this section will provide essential data to facilitate an understanding of past investment and operational expenditure relating to DG, including specifically the drivers for the DG-related cost impact on the DNOs. It also forms part of the basis for the projection of the future DG-related costs and the setting of the incentives for the DNOs in relation to DG.

Information on costs and work attributable to individual DG projects is organised into a multiple-layer structure:

- high-level aggregated information;
- high-level per-project information; and
- detailed per-project information.

Apart from costs and work attributable to individual DG projects, this section also includes:

- strategic and overall costs that are not specifically associated with individual projects; and
- summary of total DG outturn costs and the forecast made at DPCR3.

Should you think that any additional information is necessary to fully understand the historical DG development and the associated distribution activities, please include this information in an appendix to your submission.

The following table provides guidance and clarification on how to complete each table in this section and identifies the purpose of the information request.

Table Reference	Instructions for completion	Purpose
<p>Table 1. – High-level aggregated data</p>	<p>Table 1 requests the presentation of high-level information about DG and costs incurred by the DNOs in aggregate for each defined category of DG. All DG projects belonging to this period should be included in this table.</p> <p>The categorisation of DG is defined in the General Guidance section of this document.</p>	<p>With all DG projects included, this table presents the comprehensive information of the average levels of the main elements of DG-related costs for different categories of DG.</p> <p>Although all the DG connection costs, whether on sole-use or shared assets, have been recovered from the deep connection charges, the split according to the future charging arrangements will provide information on the historical levels and drivers of the costs to be remunerated from the regulated income from the next price control, as well as indication on the potential impact on the DNOs by the change in the distribution charge arrangements.</p>
<p>Table 2. – High-level per-project data</p>	<p>Table 2 requests the presentation of high-level information about DG and costs incurred by the DNOs for each DG project. As a minimum, all the DG projects belonging to this period with a capacity greater than 1MW should be included in this table.</p> <p>Each DG project should be given a unique project identifier to help cross-referencing between different parts of the DG-BPQ.</p> <p>For the data item “technology type”, a drop-down list has been built in, and detailed description provided in the “Codes” sheet.</p> <p>The data item “number of days from application to connection” can be entered on an indicative basis with explanation in the accompanying narrative setting out assumptions underlying the estimate. Where there is significant delay, the accompanying narrative should also explain the causes of the delay.</p> <p>For projects where contestable connection work has been carried out by the generator’s own contractors rather than the DNO, the accompanying narrative should indicate this and set out the relevant information including the scope of the work, the basis for the O&M charge calculation, and if applicable, the assumed or actual costs of the work.</p>	<p>A full spread of per-project costs will be obtained from this table. This will supplement the information gained from Table 1 and help further the understanding of the cost drivers. It will also provide an opportunity for selecting individual projects for requesting information at a higher level of detail to support more detailed analysis.</p> <p>The request for the timescales of connection is to collect relevant evidence given that one of the main barriers to DG development identified (eg in the Energy White Paper) was the delay in DG gaining access to the networks. Information gathered here will show an overall spread of time required for DNOs to provide connection to DG.</p>

Table Reference	Instructions for completion	Purpose
<p>Table 3. – Detailed per-project data</p>	<p>Table 3 requests detailed information about the DNOs' work and costs for selected DG projects. The projects to be included in this section will be those having the highest, lowest, and median unit costs (£/kW) in each of the DG categories in Table 1.</p> <p>Where a DNO finds it difficult to submit the detailed information for a project selected according to this criterion, it may use another project as a substitute. The substitute project should be as similar as possible to the substituted project in terms of unit costs. The DNO should mark any such substitution and provide explanation in the accompanying narrative.</p> <p>A DG project can occupy more than one row in this table, for example to enter information relating to work on several groups of assets carried out for different reasons. The unique DG identifier number should be entered the leftmost column in each incidence.</p> <p>For data items "reason for work" , "How DG helps avoid work", and "type of (ancillary) services", drop-down lists have been built in, and detailed descriptions provided in the "Codes" sheet.</p> <p>An asset installed or reinforced should be entered only once. If the work was required for more than one reason, then choose the chief reason from the drop-down list and describe other relevant reasons in the accompanying narrative.</p> <p>Where DG helps to avoid work on shared assets, the "payment or discount to DG" will include any reduction in the connection charges or payment for the contribution. Specific payments under agreements for the provision of ancillary services should be entered separately in the "payment for ancillary services".</p> <p>For "payment for ancillary services", enter the total payment for this period in 2002/03 value.</p> <p>Where precise quantitative information cannot be supplied, especially for the subsection of "operational & contractual arrangements", qualitative description may be provided in the accompanying narrative.</p>	<p>This table gives information at a greater level of detail for representative projects.</p> <p>The detailed information on work and costs on actual assets is essential for the detailed analysis to be performed to understand the relationship between the costs and their drivers. It will also help to identify areas where significant changes may occur in the future.</p> <p>The detailed dates for connection application, terms offered, and offer acceptance are collected to identify the stages within the connection process where any delay may be experienced.</p> <p>The information in the operational and contractual subsection will show the activities and costs incurred so far to actively involve DG in the planning and operation of the distribution networks. Whilst these may be currently at a low level, it is important to gather information on the start point from which any growth in the future can be monitored and taken into account in the regulatory arrangements.</p> <p>The specific information regarding the impact on the DNOs' quality of supply performance and level of distribution losses will facilitate the understanding of the interaction between DG and other aspects of DNOs' performance. This will help the coordination of relevant incentives.</p>

Table Reference	Instructions for completion	Purpose
<p>Table 4. – Strategic & overall DG-related costs</p>	<p>Table 4 requests information on activities and costs incurred by general DG development, but not specifically attributable to any individual DG projects. This includes the preparation of their networks to accommodate a general increase of the amount of DG (instead of an individual project), as well as the transition from passive, one-way distribution to actively-managed, flexible transportation of electricity and the provision of other services.</p> <p>For the “reason for incurring costs” item, a drop-down list of codes has been built in, with detailed description provided in the “Codes” sheet.</p>	<p>The information collected on how the DNOs incur general costs to support the increase in the overall amount of DG will be used to establish the current level of such activities and costs for onward monitoring in the future, so that any significant changes will be taken into consideration in the regulatory arrangements.</p>
<p>Table 5. – Summary of total DG-related costs</p>	<p>Table 5 requests the total outturn DG-related costs and the forecast made at the DPCR3.</p> <p>All the costs should be indexed by RPI to 2002/03 values.</p>	<p>Any differences shown between the outturn and the DPCR3 forecast would highlight the uncertainties faced in predicting DG-related costs.</p>

Interim Period Forecast DG Information

Introduction

The Interim Period Forecast DG Information section of the DG-BPQ is designed to obtain information on the work and costs that the DNOs expect to incur in order to connect and provide network access to DG projects whose full commissioning is forecast to take place between 1 April 2003 and 31 March 2005. It is envisaged that the information collected in this section will supplement the historical information to facilitate the understanding of the cost drivers, as well as any changes in the relationship between these drivers and the costs. It will also provide the DG-related costs that need to be taken into account in the relevant regulatory treatment of costs incurred during this price control period.

Information on costs and work attributable to individual DG projects is organised into a multiple-layer structure:

- high-level per-project information; and
- detailed per-project information.

Apart from costs and work attributable to individual DG projects, this section also includes:

- strategic and overall costs that are not specifically associated with individual projects; and
- summary of total DG outturn costs and the forecast made at DPCR3.

Should you think that any additional information is necessary to fully understand the expected DG development and the associated distribution activities in the interim period, please include this information in an appendix to your submission.

The following table provides guidance and clarification on how to complete each table in this section and identifies the purpose of the information request.

Table Reference	Instructions for completion	Purpose
<p>Table 6. – High-level per-project data</p>	<p>Table 6 requests the presentation of high-level information about DG and costs incurred by the DNOs for each DG project that the DNOs can reasonably forecast with confidence that would be commissioned during the interim period.</p> <p>Each DG project should be given a unique project identifier to help cross-referencing between different parts of the DG-BPQ.</p> <p>For the data items “technology type” and “status of connection”, drop-down lists have been built in, and full description provided on the “Codes” sheet.</p>	<p>Alongside the information from the historical period, the spread of per-project costs in the interim period collected from this table will help further the understanding of the cost drivers and any movement of the level of the main cost elements. It will also provide an opportunity for selecting individual projects for requesting information at a higher level of detail.</p>
<p>Table 7. – Detailed per-project data</p>	<p>Table 7 requests detailed information about the DNOs’ work and costs relating to DG projects that are forecast for this period. It is not mandatory for all the projects present in Table 6 to be included here, but it is expected that the DNOs should include all those that are expected to incur unit costs (£/kW) that are significantly different from the historical levels, as well as any projects for which they have sufficient information.</p> <p>The detailed instructions for Table 3 also apply here.</p>	<p>This table gives information at a greater level of detail for projects expected in the interim period.</p> <p>The detailed information on work and costs on actual assets is essential for detailed analysis to be performed to understand the relation between the costs and their drivers. It will also help to identify areas where significant changes may occur in the future.</p>
<p>Table 8. – Strategic & overall DG-related costs</p>	<p>Table 8 requests information on activities and costs that are forecast to be incurred due to general DG development, but not specifically attributed to any individual DG project. This includes the preparation of their networks to accommodate a general increase of the amount of DG (instead of an individual project), as well as the transition from passive, one-way distribution to actively-managed, flexible transportation of electricity and the provision of other service.</p> <p>For the “reason for incurring costs” item, a drop-down list of codes has been built in, with detailed description provided in the “Codes” sheet.</p>	<p>The information collected on forecast general costs to support the increase of the overall amount of DG will be used to establish the scale and pace of change in such activities and costs. Together with onward monitoring into the future, any significant changes will be taken into consideration in the regulatory arrangements.</p>

Table Reference	Instructions for completion	Purpose
<p>Table 9. – Summary of total DG-related costs</p>	<p>Table 9 requests the total forecast outturn DG-related costs and the forecast made at the DPCR3.</p> <p>All the costs should be entered as 2002/03 values (assuming that both the headline and the underlying rate of inflation is 2.5% from April 2003 onwards).</p>	<p>Any differences shown between the forecast outturn and the DPCR3 forecast would highlight the uncertainties faced in predicting DG-related costs.</p>

Future Forecast DG Information

Introduction

The Future Forecast DG Information section of the DG-BPQ is designed to obtain information on the future work and costs that the DNOs expect to incur in order to connect and provide network access to DG projects whose full commissioning is forecast to take place in the next price control period, ie between 1 April 2005 and 31 March 2010. It is envisaged that information collected in this section will be used to form part of the background information to be fed into the Forecast BPQ, which will include a base case and sensitivity scenarios, each with assumptions on DG. The information collected will supplement the historical and interim period information to facilitate the understanding of the cost drivers for DG-related distribution activities as well as any changes in the relationship between these drivers and the costs. It will also form the basis for setting the DG related incentive rates.

The DNOs will construct the base case scenario based on any indication of interests so far received from the DG developers and other local knowledge. Detailed explanation on the assumptions underlying the scenario and the likely sensitivity range of the key factors should be given in the accompanying narrative.

For the base case scenario, the information collected consists of the following:

- DG scenario information;
- high-level cost information;
- detailed per-project information; and
- strategic and overall costs that are not specifically associated with individual projects.

Should you think that any additional information is necessary to fully understand the forecast DG development and the associated distribution activities in the next price control period, please include this information in an appendix to your submission.

The following table provides guidance and clarification on how to complete each table in this section and identifies the purpose of the information request.

Table Reference	Instructions for completion	Purpose
Tables 10. – DG scenario information	Table 10 requests the presentation of high-level information about the scenarios of DG in terms of number of DG projects and capacity in each category of technology / fuel type.	Information from this table will give the key description of each DG scenario.
Tables 11. – High-level cost information	<p>Table 11 requests high-level information about the cost impact on the DNOs under each DG scenario.</p> <p>Given the significant uncertainty surrounding future DG development, it is expected that the DNOs will submit ranges of values instead of point estimates for the costs. The accompanying narrative should set out the main factors influencing these costs and explain how these factors relate to the high and low ends of the cost ranges.</p>	Information from this table will provide the forecast of the range of project specific costs in key areas in the next price control period. This is essential for determining the revenue allowance as well as setting the DG-related incentives for the DNOs.
Table 12. – Detailed per-project information	Table 12 requests detailed information about the DNOs' work and costs relating to specific DG projects that form part of the relevant scenario which the DNOs feel would help explain the high-level costs input in Table 11. Whilst not all the projects forming the scenario are required to be included here, it is envisaged that this table should include those with major cost impact and / or representative of the typical future project work and costs.	<p>This table gives information at a greater level of detail for representative projects.</p> <p>The detailed information on work and costs on actual assets is essential for the detailed analysis to be performed to understand the relation between the costs and their drivers. It will also be used to identify areas where there may be significant changes between the past and the future.</p>
Table 13. – Strategic & overall DG-related costs	<p>Table 13 requests information on activities and costs incurred by general DG development, but not specifically attributed to any individual DG project. This includes the preparation of their networks to accommodate a general increase of the amount of DG (instead of an individual project), as well as the transition from passive, one-way distribution to actively-managed, flexible transportation of electricity and the provision of other services.</p> <p>For the "reason for incurring costs" item, a drop-down list of codes has been built in, with detailed description provided in the "Codes" sheet.</p>	<p>The information collected on how the DNOs are forecast to incur general costs to support the increase of the overall amount of DG will be used to establish the scale and pace of change in such activities and costs. Together with the starting point established from the historical information and the initial movement from the interim period forecast, information collected from this table will be used to identify any significant changes that may occur in the future.</p> <p>Together with the project associated costs, information collected here will represent another important area of DG-related costs that needs to be taken into consideration in the DG-related revenue allowance and incentives.</p>