

Provision of Information

14 November 2000

1 Introduction

- 1.1 It is likely that plant embedded in distribution networks will contribute a larger proportion of total national generation in future, given the Government's policy objectives for renewables plant and CHP.
- 1.2 Set against this background, and taking into account the new regulatory structure under which distribution companies will have to facilitate competition in generation and supply across their networks, this paper focuses on the information available to potential developers. In particular this paper discusses possible further requirements on DNOs to publish sufficient technical and commercial information to give prospective generators a definitive basis for the financial appraisal of new projects and the opportunity to take informed judgements about connection including making proposals which would avoid the need for network reinforcement.
- 1.3 The paper identifies four key principles associated with the provision of information and suggests actions for developing each of these principles.

2 Background – The Current Situation

- 2.1 Access to appropriate network information is useful for embedded generation developers, particularly in optimum siting and sizing of their projects.
- 2.2 Transmission connected generators recognise the benefit of the information on the transmission system in Great Britain which is provided in the "Seven Year Statements" (SYS) of the three GB transmission system operators. DNOs do not publish network information in an SYS format.
- 2.3 DNOs do provide network data on request, in line with existing licence requirements to provide a "Statement of Opportunity" or "Planning Statement" covering appropriate network information as detailed in their Distribution Codes. The licence conditions allow reasonable recovery of costs but they do not specify charging policies. Charges for data provision can vary between DNOs, often due to the different extent to which relevant records are available. There is an asymmetry of information availability between the network operator and developer.
- 2.4 NGC has standard fees for detailed assessment of a generation project (i.e. making a connection offer) as detailed in the LC10 statement of charges. In addition there is an option to pay the actual costs incurred in preparing a connection offer. In either case, if the connection terms are accepted, the fees are refunded against connection charges payable. DNOs charge cost reflective fees for project assessment, which depend on the scope of the study required.

- 2.5 DNOs have an obligation to develop, maintain and operate an efficient, co-ordinated and economical system for the distribution of electricity. Network information is generally stored in a wide mix of record formats and is not currently in a suitable form for publication. It would require additional effort to translate and maintain these records in an electronic format suitable for external publication. Information for the lower voltage networks is sparser than at higher voltages and it would be an easier and cheaper exercise to publish information focused on the higher voltage networks rather than for the whole network.
- 2.6 The requirement to publish a SYS is a licence condition on the transmission licensees. There is no equivalent licence condition on DNOs. The NGC SYS is available on the Internet. The volume of data required to describe the complete distribution networks is of a higher order of magnitude than that for the transmission system with a total circuit length at least a hundred times greater than the NGC system and over 2000 times as many substations. To provide a similar 'Seven Year Statement' for the whole distribution network would be a significant task. Restricting the information to the higher voltage network would be a more feasible prospect since the size and cost of the task increases as the network voltage level reduces.

Distribution networks are extensive. Indicative parameters for a DNO network are:

- Connected customers range from 0.64M to 3.34M (average 1.90M)
 - Circuit lengths (ie total of all overhead lines and underground cables) range between 28,000km to 90,000km (average 48,000km)
 - Total transforming points range between 12,000 to 62,000 (average 39,000)
 - Primary substations (generally serving between 5,000 and 10,000 customers) between 120 and 611 (average 334)
 - Existing numbers of embedded generators: low hundreds per DNO
- 2.7 PES Licence Condition 12 (Condition 14 for some DNOs) obliges DNOs to maintain confidentiality of customer information. Due to the visibility of individual customers in DNOs' networks, it is sometimes impossible to release items of network data such as loading and generation profiles. It may, however, be possible to answer requests for data in terms of generic scenarios.
- 2.8 The level of change due to connection, refurbishment and reinforcement activity is higher on distribution networks than on the transmission network. Within distribution systems, activity of this type is greater at lower voltages than at higher voltages and project lead-times are shorter. Hence, the overhead of keeping any published information up-to-date will be greater for the lower voltage network than for the higher voltage network.
- 2.9 Proposed new Distribution Licences have been the subjects of a recent Ofgem consultation. One condition (25) within the draft licence relates to the provision of information regarding DNOs' networks. The Utility Act places a requirement on DNOs to facilitate competition in the supply and generation of electricity. Providing network information could be one of the means of demonstrating compliance with this requirement.
- 2.9 Networks are designed and operated in accordance with industry standards that have been recognised under the DNOs' Licences. These standards are in the public domain and listed

in the Distribution Codes. DNOs have their own internal policies and standards to ensure these licence standards are achieved with their particular network configurations. These internal 'policy documents' and 'internal standards' are often quoted to potential developers and can affect the detailed design considerations. There is no approval process or regulatory code in the public domain for these internal documents. Attempts are made to agree the applicability of such policies with the developer. However if it is not possible to reach agreement there is recourse to determination by Ofgem.

3 Conclusions

3.1 Commentary on Consensus

- 3.1.1 There is consensus that appropriate information on the distribution and transmission network is of value to generator developers. The extent and scope of the information provided for the transmission networks is generally regarded as acceptable. There is a recognition that distribution network data, whilst available under existing licence mechanisms, could be made more readily accessible.
- 3.1.2 It is recognised that the volume and rate of change of distribution network data is significantly higher than that relating to transmission systems. There is therefore a need to ensure that there is a realistic balance between the value of the information made available and the cost of providing it.
- 3.1.3 It is agreed that a standard approach amongst the DNOs for the provision of information relating to new developments and to the connection application process itself would be beneficial.
- 3.1.4 It is recognised that there are confidentiality issues relating to data that can be directly attributed to a specific load or generation customer.
- 3.1.5 It is agreed that there is a linkage between the extent of the information required to be readily accessible and the depth of the connection charges for new connectees. For example more extensive information would be required to increase the transparency in connection quotes made under a deep reinforcement charging mechanism.
- 3.1.6 The Utility Act places a requirement on DNOs to facilitate competition in the supply and generation of electricity. Providing network information could be one of the means of demonstrating compliance with this requirement.

3.2 Issues

- 3.2.1 All parties need to agree the balance between the amount of distribution network information required to meet users needs and the cost of providing this information.

- 3.2.2 A standardised format between companies for publication of information would help users to interpret the information.
- 3.2.3 Agreement is required on whether the initial and running cost of providing the information should rest with demand customers, generators or DNOs. A mechanism for addressing these costs needs to be established.
- 3.2.4 There is a linkage between the deliverables of this workstream and the draft Licence Condition 25. The provisions of Draft LC 25 may go some way to meeting connectees requirements.
- 3.2.5 The position regarding information held by a DNO that may be considered by a customer as being confidential needs to be clarified. This is an issue where a specific customer can be identified in information placed in the public domain and when independent developers are assessing projects in a part of a network where capacity is restricted.

4 Possibilities

The output from the above analysis can be summarised into four key principles that have been identified as critical by the contributors. Each principle should be developed to ensure symmetry between information in terms of demand and generation customers. For each of these four principles a process for moving forward has been agreed. There is consensus that the current provision of information by NGC is sufficient and hence the following comments relate primarily to the distribution network.

4.1 Principle 1

High level network information needs to be available to

- a) meet the requirements arising from the proposed Licence Condition 25
- b) inform the market-place generally
- c) enable developers to identify potential business opportunities
- d) provide transparency into the cost of network connections.

Action: An exercise is required to identify the distribution network information that should be contained in a 'System Statement' made available by the DNOs. Such a statement would provide a link to accessing more detailed project specific information. It is anticipated that the exercise, which will require joint input from DNOs and generators, will include consideration of the provision of the following types of information:

- a) Location plans showing key substations and circuits
- b) Narrative of the overall capability of the network to accommodate additional load and generation, giving a DNO view of potential opportunities (including demand constrained zones provided to suppliers under existing DUoS agreements)
- c) Known DNO network development proposals
- d) An overview of network configuration and basic design principles
- e) The extent and depth of the more detailed information and data which would be required to consider in detail a particular connection.

In addition the exercise should take into account:

- a) the difference in depth of information at different voltage levels
- b) the reduced requirement for more detailed information if there is a move towards shallow charging policies
- c) the outcome from other work groups which may influence the information required to design or manage distribution networks differently.

4.2 Principle 2

There needs to be an appropriate balance between the value of the information provided and the cost of providing it.

Action: The exercise outlined above should establish a pragmatic and economic balance between the information that is required to be generally available in the public domain and that which would be available on request.

4.3 Principle 3

There should be a consistent approach across DNOs to the provision of information and to the connection application process.

Action: DNOs should work together to agree a standard format for the presentation of information including bringing forward general guidelines for developers on the connection process.

4.4 Principle 4

A mechanism for addressing the costs of providing additional information needs to be clearly established.

Action: Once the optimum level of information provision has been established, a mechanism for funding needs to be developed and put in place. Options for funding include:

- a) an increased regulatory allowance to fund the production of a 'System Statement'
- b) utilising the present cost recovery mechanism as described in the PES licence (and draft Distribution Licence Condition 5) for providing more detailed project specific information
- c) establishing a 'seed corn' fund to provide funding for the initial, relatively high, cost of putting in place systems and procedures to provide additional network information
- d) incorporating the costs into any future incentive arrangements arising from the other workstreams.

5 Contributors to the Report

This report has been compiled by the following DTI embedded generation working group members:

David Porter and Phil Jones, acting as rapporteurs.

Contributions were received from:

Phil Jones, Alan Laird, Ian Tait and Alan Creighton (on behalf of DNOs)

Lewis Dale (on behalf of NGC)

David Porter, Steven Johnson and Catherine Mitchell (on behalf of Generators)
Terry Brookshaw (on behalf of Suppliers)
Andrew Horsler (on behalf of Domestic Consumers)
Phil Baker (on behalf of the DTI)
Review comments were provided at the DTI Embedded Generation Working Group Meetings.

Annexes – Individual Contributors’ Points of View

The following sections set out the issues and views that individual rapporteurs representing network operators, generators, suppliers and customers wish Ofgem and HMG to take into account when reaching its conclusions.

6 Distribution Network Operators

- 6.1 DNOs accept that a standard approach to data requests is desirable and support the principle of transparent access to appropriate network data.
- 6.2 DNOs accept that the provision of network information may assist opportunities to be established. However, the cost of providing information needs to be weighed against its value. For information specific to a scheme the current arrangements for cost recovery provide this link. DNOs believe that the benefit of providing general network data for the total distribution system is far outweighed by the cost of collating and publishing it. It would be more feasible to provide such information on the higher voltage network only.
- 6.3 The expectation among network users that DNOs could provide a level of data consistent with the SYSs of the transmission licensees is unrealistic. The reasons for this are:
- a) The vastly greater quantity and variety of distribution network assets
 - b) The multi-voltage topography at any geographic location and
 - c) The more frequent changes on the distribution system

There would be a significant requirement for data maintenance and any published information would soon be out of date, particularly for the 11kV and low voltage networks.

- 6.4 Currently, site specific data is provided on a cost recoverable basis and as such there is no corresponding regulatory allowance for this activity. For all DNOs, provision of detailed network information is time consuming. If general information on large parts of the network is to be provided, a method of recovering the costs needs to be agreed with all parties.
- 6.5 For individual schemes, DNOs favour an early approach by the prospective embedded generator to discuss the network capability in the area of connection. The existing mechanisms allow for provisions of scheme specific data where this is required. There is scope to publicise this facility and encourage early discussions.
- 6.6 In summary, DNOs are of the view that a sensible balance is required between open and transparent access to network data and the cost associated with gathering, collating, publishing and updating the information.

7 Embedded Generators

- 7.1 The Utility Act places a requirement on DNOs to facilitate competition in the supply and generation of electricity. Generators consider that the provision of appropriate information into the public domain is a vital first step towards DNOs achieving that requirement.
- 7.2 Generators accept network operator sensitivities concerning the provision of network information for the distribution networks but they believe the case is overstated. Different approaches for the various network voltages are possible and generic information relevant to all DNOs could be used to a considerable extent thereby minimising individual DNO requirements.
- 7.3 The production of the first issue of a network information statement will clearly require a special effort (as it did for NGC's SYS) but once the framework is in place updates would be easier. An Internet based information system would avoid excessive bureaucracy and overheads and the format could be standardised.
- 7.4 Generators believe that more open network information would not only benefit generators but also demand only customers and the increasing population of generation/demand customers. Improvements could be expected in quality of supply and the efficiency with which customers are connected.
- 7.5 More public domain information may reduce the number of information requests to network operators and speed the process of obtaining a connection.
- 7.6 Lack of network information makes it difficult to assess whether deep entry charges are reasonable and whether a due allowance is being made for any benefits arising from the early replacement of network assets i.e. 'betterment'. When a significant contribution is being made to reinforce the distribution network it is often necessary, as part of a project financing due diligence process, to demonstrate that the contribution is fair and reasonable.
- 7.7 Generators are faced with different approaches from different DNOs on information. Some are helpful and offer support. Others provide a less comprehensive service. Developers often need to employ expert assistance to deal with the DNO.
- 7.8 Generators should be able to identify potential business opportunities and gain a reasonable idea of the likely implications of a connection from information in the public domain without having to commit large sums for detailed assessments.
- 7.9 Generators are generally satisfied with the public information that is available for the NGC network. It is an aspiration of embedded generator developers to have similar information for distribution systems. There are disputes on the detail of connection agreements but there is less cause for concern about asymmetry between the information available to the generator and NGC. Generators believe that there are business advantages for NGC in producing such information and that DNOs could benefit from a similar approach.
- 7.10 The increase in demand for distribution connection information may overwhelm the DNO

planners if they are given insufficient resources to deal with developers. The provision of more public information may increase the efficiency of such activities. The 'cost reflective' approach to charging for information gives no incentive to improve the efficiency of information production.

- 7.11 All DNO standards, specifications and codes of practice should be published in their Licence Condition 8 statement (and Scottish equivalent) and available on the internet.
- 7.12 DNOs are only obliged to provide the information requested. 'Shallow entry' conditions (cf NGC connection) do not require the same level of detailed knowledge as 'deep entry' connections.

8 Suppliers

- 8.1 Suppliers are of the view that information regarding the state of distribution networks should be made transparent to both suppliers and generators in the form of a statement comparable to the NGC Seven Year Statement.
- 8.2 The compilation and provision of such information may be costly and usage of the information may be limited. Suppliers advocate that information should be provided on a prudent value for money basis.

9 Customers

- 9.1 Representatives of domestic consumers take the view that, in principle, the monopoly businesses of transmission and distribution should make available in the public domain the maximum amount of information about their networks, subject to protecting confidential information the publication of which would damage the interests of individual customers. Such disclosure would contribute to achieving the consumer objective of improving quality of supply.
- 9.2 Therefore consumer representatives favour the provision by DNOs of a greater and more consistent level of information than is currently readily available for generation and demand customers. There clearly must be a balance between the value of the information provided and the cost of providing it, although consumer representatives are sceptical about claims of substantial additional costs. Consumers would not support the reopening of the present Distribution Price Review to accommodate any such costs, but would favour the matter being embraced within future revised incentive arrangements.