

Distribution Code Summary

May 2017

TABLE OF CONTENTS

1	Introduction	5
1.1	About this Document	5
1.2	Great Britain Electricity Regulatory Structure	6
1.3	EU Regulations	9
2	Distribution Code Introduction	10
2.1	What is the Distribution Code?	10
2.2	History of the Distribution Code	11
2.3	Distribution Code Associated Documents	12
2.4	Scope of the Distribution Code	12
3	Overview of the Distribution Code Content	13
3.1	The Distribution Code	13
3.2	Distribution Planning and Connection Code (DPC)	14
3.2.1	Design Principles and Standards (DPC4)	14
3.2.2	Network Statements (DPC4.5)	14
3.2.3	Requirements for Connection (DPC5 and DPC6)	15
3.2.4	Embedded Generators (DPC7)	15
3.3	Distribution Operating Code (DOC)	16
3.4	Distribution Data Registration Code	17
3.4.1	Procedures and Responsibilities	18
3.5	Supporting Documents	18
3.6	User Compliance with the Distribution Code	18
4	Distribution Code Modification	21
4.1	The Distribution Code Review Panel (DCRP)	21
4.2	Overview of Distribution Code Modification Process	22
4.2.1	Progressing a Distribution Code Modification	22
4.2.2	Working Groups	23
4.2.3	Consultation	23
4.2.4	Report to Ofgem (the Authority)	24
4.3	Governance of Technical Standards	25
4.3.1	Distribution Code Standards	25
4.3.2	Other Industry Standards	25
4.3.3	Individual DNO's Standards	25
4.4	Code Governance Review	25
4.4.1	Code Administrator Code of Practice	25

TABLE OF CONTENTS

Appendix 1	Relationship Between the Distribution Code and the Grid Code	26
Appendix 2	Connection to the Distribution System	29
A2.1	Application for Connection Procedures	29
A2.2	Typical Areas for Discussion	29
A2.3	Connection Types	30
A2.4	Requirement to Offer Terms	30
A2.5	Right to Reject an Application	31
A2.6	Connection Agreements and Use of System Agreements	31
A2.7	Consents and Statutory Obligations	32
A2.8	Information provided by the DNO	32
A2.9	Approval to Connect	33
A2.9.1	Readiness to Connect	33
A2.10	Confirmation of Approval to Connect	34

VERSION CONTROL

Version number	Date	Summary of changes
1.0	DECEMBER 2015	First version issued.
1.1	MAY 2017	Minor revision to first version.

This summary does not form part of the Distribution Code and therefore has no legally binding effect. Furthermore, should there be disparity between this document and the Distribution Code, precedence is placed upon the Distribution Code.

FOREWORD

The Distribution Code is a comprehensive document containing the minimum technical specifications for operation and development of distribution networks in Great Britain, and for the connection of equipment to them. It is designed to allow the development, maintenance and operation of an efficient, economical and coordinated electricity system. All users of and connectors to the distribution system in Great Britain must conform to the specifications as laid out in the Distribution Code and, where applicable, also with their individual Connection and Use of System Agreements as made between individual parties and Distribution Networks Operators (DNOs).

The Distribution Code, also known as the DCode for short, is free to download from the Distribution Code website. It can be found, along with a number of associated documents, at:

www.dcode.org.uk

This document summarises and introduces the Distribution Code in an easily digestible format.

Efforts have been made to limit the use of technical terms and acronyms in this summary, and when used these are defined. A full set of definitions can be found in the Distribution Glossary and Definitions (DGD) section of the Distribution Code.

The Distribution Code is a continuously evolving document in response to developments in the industry and legislation, and as such modifications are submitted which can alter the document. These modifications are approved by the Authority (Ofgem – as established in the Utilities Act 2000) after being reviewed through industry consultation and the Distribution Code Review Panel, an industry body set up for this purpose. Distribution Code open and closed consultations can be found at:

www.dcode.org.uk/consultations

An index of the revisions which have been made to the Distribution Code are contained in an Issue Summary table at the end of the document.

CONTACT INFORMATION

This document has been prepared on behalf of the Distribution Code Review Panel (DCRP). If you require further details about any information contained in this document please contact the Distribution Code Administrator at: dcode@energynetworks.org

Specific enquiries concerning this document should be addressed to:

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52 Horseferry Road
London SW1P 2AF

The Distribution Code Administrator welcomes any feedback regarding this document for future improvement; please make contact using the details above.

1 Introduction

Key points:

- Distribution Network Operators (DNOs) own and operate regional distribution networks, which supply power from the transmission system to industrial, commercial and domestic users.
- DNOs are licensed by Ofgem; licence conditions set out the legal requirements on them.
- One of the conditions of the Distribution Licence obligates DNOs to have in force a core industry document called the Distribution Code.
- European Networks Codes are being developed, as required by EU legislation, which will impact existing GB electricity documents – including the Distribution Code.

1.1 ABOUT THIS DOCUMENT

This document gives a high level overview of the Distribution Code, and is aimed at anyone with an interest in the Distribution Code. It contains information about the regulatory structure in Great Britain and Europe and also provides a simple explanation of the various sections of the Distribution Code. This document is structured as follows:

- This first chapter provides an overview of the regulatory structure of the power sector in Great Britain, and introduces the development of relevant European regulations.
- Chapter 2 gives an introduction to the Distribution Code.
- Chapter 3 provides an overview of the Distribution Code content, including an overview of key sections.
- Finally, Chapter 4 describes the process for making modifications to the Distribution Code.

There are also two appendices in this document:

- Appendix 1 discusses the relationship between the Distribution Code and the Grid Code, and includes some illustrative figures.
- Appendix 2 contains information on connecting to the distribution network.

1 Introduction

1.2 GREAT BRITAIN ELECTRICITY REGULATORY STRUCTURE

The main roles in the power sector are:

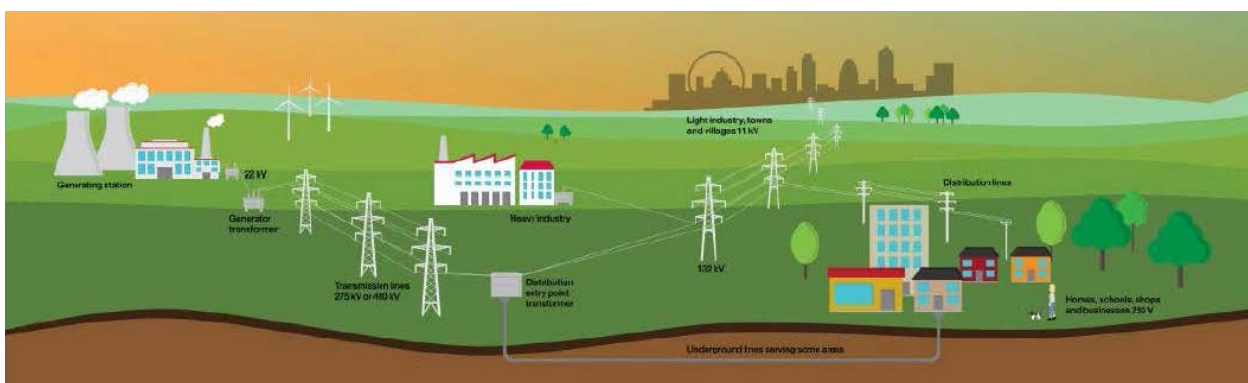
- Generation.
- Transmission.
- Distribution.
- Supply (retail).

The high voltage electricity transmission network in England and Wales is owned by National Grid Electricity Transmission plc (NGET), in south and central Scotland by Scottish Power Transmission Limited (SPT), and in north Scotland by Scottish Hydro Electric Transmission Ltd (SHETL).¹ These companies are Transmission Owners (TOs). National Grid is also responsible for the day to day control of the whole GB Transmission System (i.e. the transmission systems of NGET, SPT and SHETL taken together) as the GB System Operator (SO).

The transmission network carries electricity from power stations to substations where the voltage is lowered ready for the distribution networks (see Figure 1). There are six Distribution Network operators (DNOs) that own and operate the regional distribution networks, which supply power from the transmission system to industrial, commercial and domestic users.

The distribution system operates at nominal voltages of 66kV, 33kV and 22kV (Extra High Voltage or EHV), 11kV and 6.6kV (High Voltage or HV) and 400 volts and 230 volts (Low Voltage or LV). The 132kV network in England and Wales is also classed as part of the distribution system but in Scotland the 132 kV network is classed as transmission. The voltage of customer connections depends on the demand, the purpose for which the supply is used and the local technical requirements of the distribution system. An increasing amount of generation is connected directly to the distribution system and these are termed dispersed, distributed or embedded, generators. The terms are synonymous and Embedded is used throughout the Distribution Code.

Figure 1. An illustration of the power system, kindly provided by National Grid



Some DNOs have links with the generation and supply (retail) of electricity. Generation and retail are fully competitive activities. The supply function deals with the marketing of electricity, billing and commercial aspects of the use of electricity. Suppliers, who supply electricity to customers, are entitled to use both the transmission and distribution systems for the transport of electrical energy from generating plants to customers. By virtue of the conditions of its Distribution Licence, the DNO is obliged to offer use of its distribution system to all suppliers. The licence provides that in doing so the DNO must not discriminate in favour of any supplier.

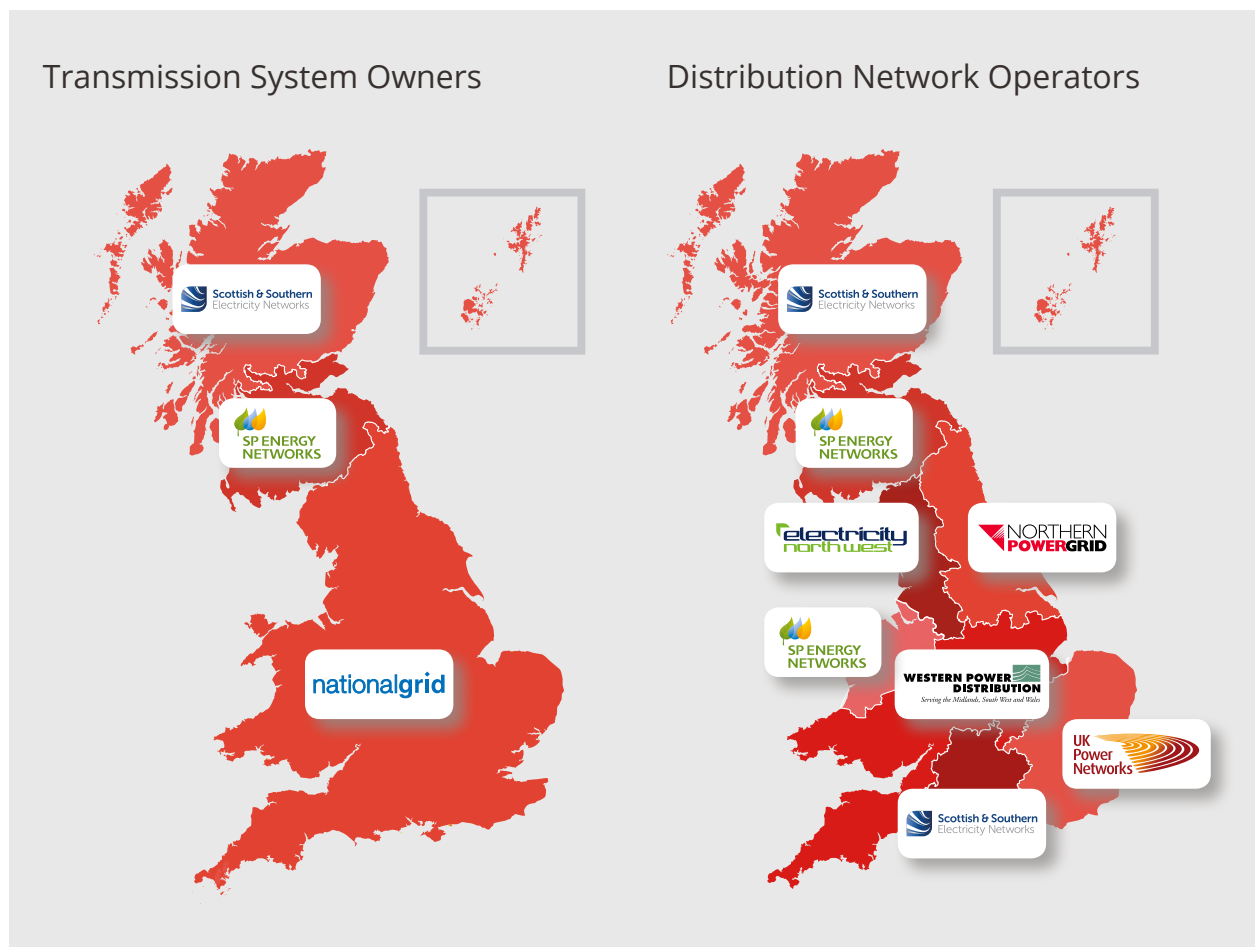
¹ In England and Wales the transmission system is the equipment principally rated above 132 kV while in Scotland they are those principally at or above 132 kV.

1 Introduction

Meters record the amount of energy used by customers. Suppliers use information from Meters for billing purposes. Metering is also used to record the amount of electrical energy produced by generators, and transferred over the electrical network.

Figure 2 shows the different regions for GB Electricity Transmission Owners and Electricity Distribution Network Operators (DNOs).

Figure 2. Different regions for Transmission Owners and Distribution Network Operators in GB, Maps kindly provided by the Energy Networks Association: www.energynetworks.org



The Electricity Act 1989 sets out the legislative framework for participants including Generators, Transmission Owners, DNOs and Suppliers and the requirement for them to have a licence. These licences are administered by Ofgem, the National Regulatory Authority.

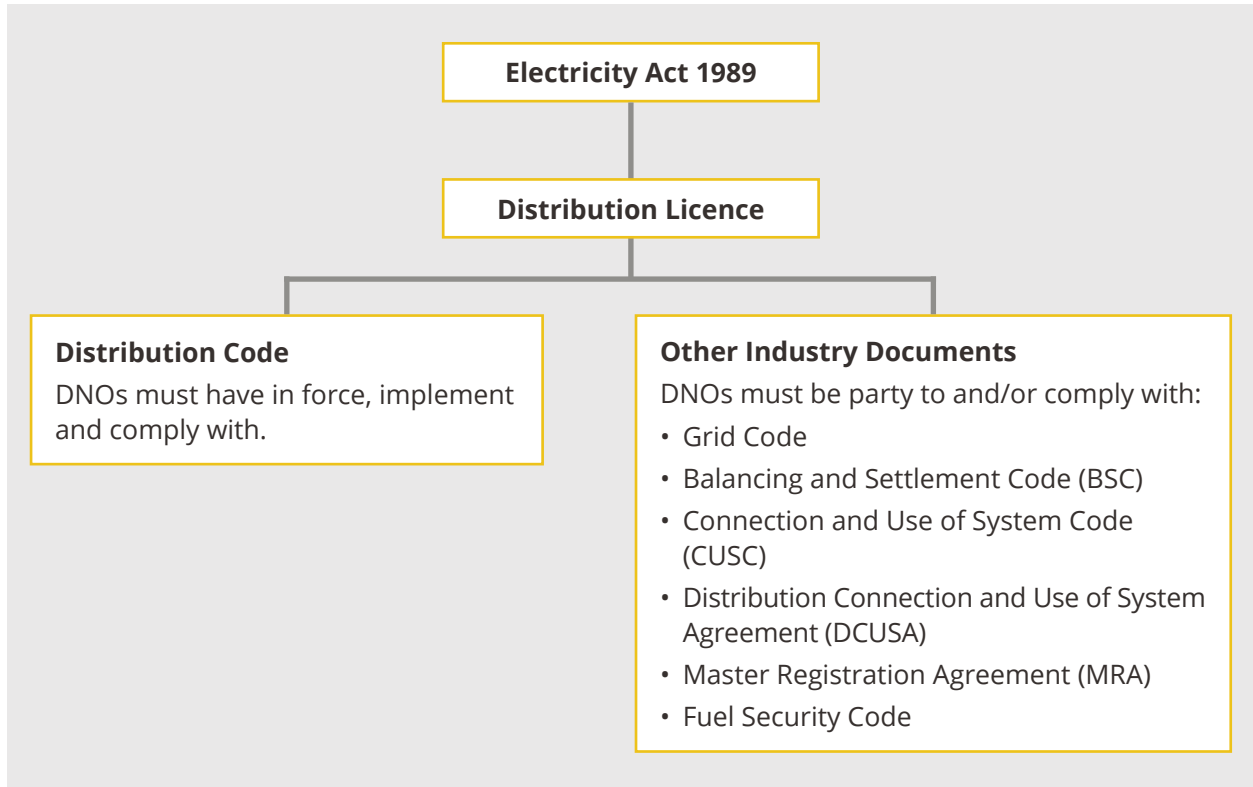
The conditions in the Distribution Licence require DNOs to have in force a core industry document called the Distribution Code. The Distribution Licence conditions set out:

- The requirements of the Distribution Code (the objectives of the document).
- Some specific contents/sections.
- Procedures for modifying the Distribution Code – discussed more in Section 4 of this document.
- That the Distribution Code should be made freely available.

1 Introduction

DNOs also have to comply with and/or be party to a number of other core industry documents. This is illustrated in Figure 3.

Figure 3. Legislative framework for Distribution Network Operators



It is a licence obligation on DNOs to maintain the Distribution Code. Other licensees have to comply with the Distribution Code by virtue of their licences, and other parties connecting to a DNO's system have to comply with it as a condition of their connection agreement. As such, users do not sign up to the Distribution Code; rather they are obliged to comply with it via licences or terms of connection agreements.

1 Introduction

1.3 EU REGULATIONS

The European Commission identified the need to develop European Network Codes (ENCs) during the course of developing the Third Energy Package.² The Third Energy Package, which refers to a suite of legislation for electricity and gas, has three key outputs:

1. Enhancing sustainability and helping the EU meet its decarbonisation obligations.
2. Ensuring security of supply in light of a changing generation mix.
3. Creating a single European market for electricity.

The European Network Codes are developed in consultation with EU member states. Once developed, they will become EU Regulation and will have precedence over all the electricity codes in individual member states. This will have an impact on the existing electricity codes in Great Britain, including the Distribution Code. The introduction of the European Networks Codes will be the catalyst for the next major alterations to the Distribution Code to ensure there are no conflicts between the two. Figure 4 shows how the British industry bodies map to their European counterparts.

More details about the European Codes coming into effect can be found at:

www.entsoe.eu/major-projects/network-code-development/Pages/default.aspx

www2.nationalgrid.com/uk/industry-information/electricity-codes/european-network-code

Figure 4. Mapping of British industry bodies with their European counterparts



² More information is available on the Third Energy package on a number of websites, including Ofgem www.ofgem.gov.uk/gas/wholesale-market/european-market/eu-legislation and National Grid www2.nationalgrid.com/UK/Industry-information/Europe/Third-energy-package

2 Distribution Code Introduction

Key points:

- The Distribution Code contains technical requirements for connection to, and use of, the distribution system.
- The first Distribution Code for Great Britain was published in 2002, based on previous versions that were in use in England and Wales, and in Scotland.
- Some Distribution Code requirements are implemented through other industry documents, such as Engineering Recommendations G83 and G59.

2.1 WHAT IS THE DISTRIBUTION CODE?

The Distribution Code contains technical requirements relating to the connection to and use of electricity distribution systems, for existing and potential users. It sets out the procedures and principles that govern the DNO's relationship with all users of the distribution system. The Distribution Code is designed to:

- Permit the development, maintenance, and operation of an efficient, coordinated and economical system for the distribution of electricity.
- Facilitate competition in electricity generation and supply.
- Discharge the obligations on DNOs from their licence conditions and other European regulations.

The Distribution Code is not an exhaustive list of requirements to be complied with by those connected to the distribution system. They must also comply with the requirements of the Electricity Act 1989, the Electricity Safety, Quality and Continuity Regulations (ESQCR), wiring regulations (BS7671) and all other relevant legislation which comes into force. A summary of key facts about the Distribution Code is shown in Table 1 below.

Table 1. Distribution Code – Essential Facts

What?	A document that contains the technical requirements for potential and existing users of electricity distribution networks in Great Britain.
Why?	Required in DNO licence conditions, the Distribution Code sets out important specifications for connecting to and using the distribution system. It helps users to understand what is expected from them, and what they can expect from DNOs.
Who?	The Distribution Code is developed and maintained by the Distribution Code Review Panel (DCRP). The Energy Networks Association is the Code Administrator; their role includes facilitating the process for making modifications to the Distribution Code – more on that in Section 4 of this document.

2 Distribution Code Introduction

Table 1. Distribution Code – Essential Facts *continued*

Where?	The Distribution Code is available for download free of charge on the DCode website: www.dcode.org.uk The DCode website contains helpful information about the Distribution Code, such as current and recent consultations.
When?	The Distribution Code is regularly reviewed and updated, to reflect changes in the electricity sector.

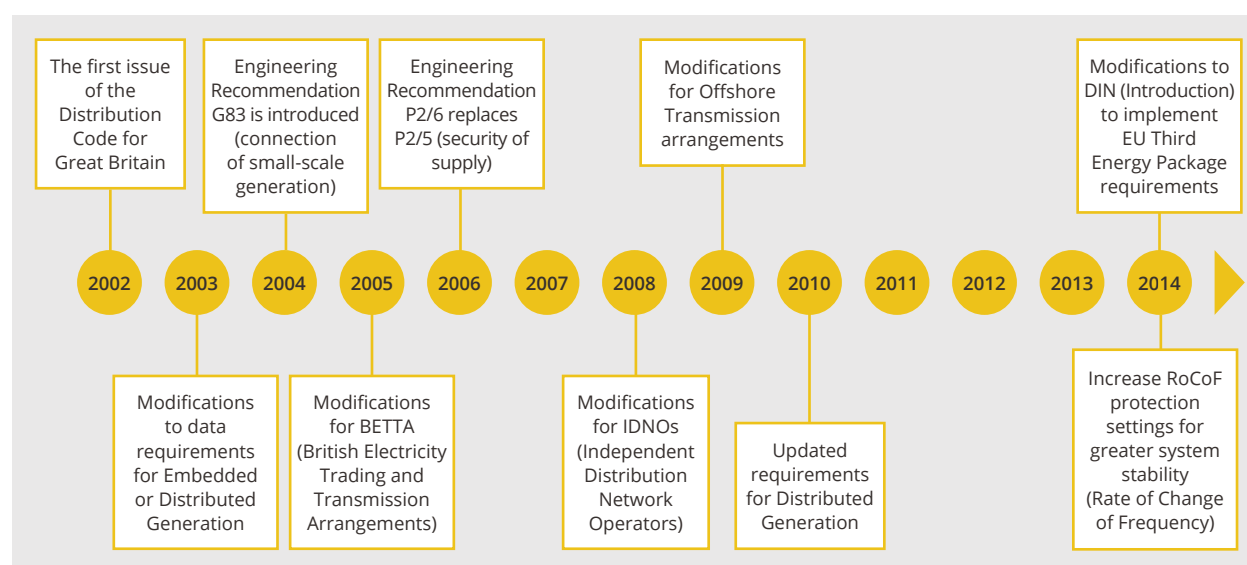
2.2 HISTORY OF THE DISTRIBUTION CODE

Prior to the 1990s, electricity distribution was conducted by state owned companies. In England and Wales there were 12 Area Electricity Boards (AEBs). In Scotland, there were two vertically integrated companies, in north and south Scotland. In the early 1990s the Area Electricity Boards were formed into Regional Electricity Companies, and electricity utilities across GB were privatised.

The electricity market now operates across Scotland, England and Wales under the arrangements established in the Energy Act 2004 and the BETTA (British Electricity Trading & Transmissions Arrangements). The historic differences in structure and market operation lead to some minor differences in terminology and information exchange requirements. However, the technical requirements of distribution systems are identical and a common Distribution Code has been adopted for Great Britain as a whole, with a small number of alternative provisions for Scotland and England and Wales.

The first Distribution Code for Great Britain was published in 2002, based on previous versions that were in use in England and Wales, and in Scotland. Some key updates to the Distribution Code since it was first published are shown in the timeline in Figure 5.

Figure 5. Timeline of key changes to the Distribution Code of Great Britain³



³ The timeline includes reference to IDNOs (Independent Distribution Network Operators). An IDNO is a holder of a distribution licence, who builds, owns and operates a distribution network, which is an extension to existing DNO network. They typically build network for new developments such as business parks, retail and residential areas and leisure facilities.

2 Distribution Code Introduction

2.3 DISTRIBUTION CODE ASSOCIATED DOCUMENTS

Some requirements of the Distribution Code are implemented through other industry documents. They are listed in Annex 1 of the Distribution Code, and are mostly Engineering Recommendations. These documents typically cover certain technical areas in detail, such as connection of generation, switchgear ratings and supply quality planning limits.

There are other industry documents which are not implemented via the Distribution Code, but do have a material impact on distribution network users. These are listed in Annex 2 of the Distribution Code.

2.4 SCOPE OF THE DISTRIBUTION CODE

The Distribution Code applies to all potential and existing users of distribution systems, including:

- Demand customers.
- Suppliers.
- Embedded generators.
- Other Authorised Distributors – i.e. Independent Distribution Network Operators (IDNOs) or private networks.
- Meter Operators.

Customers and embedded generators are classified in the Distribution Code by demand or capacity (e.g. kW, MW) and connection voltage. The Distribution Code covers distribution systems, which are defined as voltage levels 33kV and below in Scotland, and 132kV and below in England and Wales.

The Distribution Code does not deal with charges and other commercial terms.

3 Overview of the Distribution Code Content

Key points:

- Key sections of the Distribution Code are the Distribution Planning and Connection Code (DPC), the Distribution Operating Code (DOC) and the Distribution Data Registration Code (DDRC).
- Some Distribution Code requirements are implemented through other industry documents. There are other industry documents which are not implemented via the Distribution Code, but do have a material impact on distribution network users.
- Different parts of the Distribution Code apply to different categories of users. This is summarised in Section 3.6.

3.1 THE DISTRIBUTION CODE

The Distribution Code document is made up of a number of sections. Most of these form the Distribution Code (**yellow rows below**), although some sections of the document are for information only, and do not form part of the Distribution Code (**grey rows below**), illustrated in Figure 6 below.

Figure 6. Sections of the Distribution Code document

	Guidance Notes	
	Annex 1	Lists the Electricity Industry Standards in which Distribution Code requirements are implemented
	Annex 2	Lists the Standards that are not implemented via the Distribution Code but have an impact
DGD	Distribution Glossary and Definitions	Defines terms used in the Distribution Code
DIN	Distribution Code Introduction	Introduces the Distribution Code
DGC	Distribution General Conditions	Contains conditions that apply to all aspects of the Distribution Code
DPC	Distribution Planning and Connection Code	Specifies technical, design and operational criteria and procedures
DOC	Distribution Operating Code	Sets out operating procedures and information required
DDRC	Distribution Data Registration Code	Provides guidelines for the collection of information exchanged between Users and DNOs

Subsequent sections of this document consider in turn the main Distribution Code sections, as well as some discussions on the process of applying for a connection to the distribution system. There is more information on connecting to the distribution system in Appendix 2 of this document.

3 Overview of the Distribution Code Content

3.2 DISTRIBUTION PLANNING AND CONNECTION CODE (DPC)

The Distribution Planning and Connection Code sets out technical and design criteria, and the procedures applied by DNOs, and taken account of by users, in the planning and development of the distribution system, including information exchange.

Some of the key sections of the Distribution Planning and Connection Code (DPC) are discussed below. There is more information on the connection process in Appendix 2 of this document.

3.2.1 Design Principles and Standards (DPC4)

DPC4.2 specifies the characteristics of the distribution system that must be provided by the DNO, including security of supply, voltage and frequency limits, voltage disturbance and harmonic distortion.

DPC4.3 specifies the technical requirements for small customers taking low voltage supplies of 100 amps and less (i.e. typical householders). Installations complying with BS7671 Requirements of Electrical Installations (wiring regulations) are deemed to comply with the Distribution Code.

The general technical requirements for larger installations are specified in DPC4.4, which makes reference to Electricity Supply Industry Standards covering earthing arrangements. More complex requirements for High Voltage Customers are specified in DPC6 and DPC8.

3.2.2 Network Statements (DPC4.5)

The DNO is required by the Authority (Ofgem) to prepare a Long Term Development Statement (LTDS), for the whole of the DNO's distribution system. The Long Term Development Statement gives information to assist prospective and existing users when developing their connection arrangements with the DNO.

In addition to this, prospective or existing users can request a more detailed statement from the DNO showing its best estimate and forecast of the present and future circuit capacity, power flow and loading on the relevant part of the distribution system.

The requested statement should be prepared by the DNO within 28 days of being requested, although longer timescales may be agreed with Ofgem if the request is complex.

The Distribution Code makes it clear that the requested statement shall include:

- a. Information that the DNO considers necessary for the requester to assess opportunities available for connection to or use of the distribution system specified in the request.
- b. If requested, a commentary setting out the DNO's view on the suitability of that part of the system for the purpose specified in the request.

The DNO will only omit supporting information from the statement on the grounds of confidentiality, as required by the Distribution Licence. The omission of information will not invalidate the conclusions of the statement.

The Distribution Licence (Part J of Standard Licence Condition 14) sets out the timescales for DNOs to provide the above statements, and provisions for DNOs to make charges for the provision of information.

3 Overview of the Distribution Code Content

3.2.3 Requirements for Connection (DPC5 and DPC6)

DPC5 (General Requirements for Connection) specifies the connection arrangements and information requirements. The requirements for small users are less onerous than for large users for whom more detailed information such as Active Power and Reactive Power is required. DPC5 also contains information about disturbing loads, and the need to ensure that users comply with the standards referred to in DPC4.

DPC5 defines two categories of planning data:

1. **Standard Planning Data** – in most cases it is possible for the DNO to assess a connection application based on this information (requested in the connection application).
2. **Detailed Planning Data** – in some cases, additional information is required for the DNO to conduct their assessment of a connection application.

Planning data supplied to DNOs by users may be allocated to one of three status levels (DPC1.7):

1. **Preliminary Project Planning Data** – Data supplied by a user during the connection application is Preliminary Project Planning Data, until a binding Connection/Use of System Agreement is in place between the DNO and the applicant. This data is treated as confidential by the DNO.
2. **Committed Project Planning Data** – The data relating to the user's development when a Connection/Use of System Agreement has been established. This forms the basis for DNOs to plan their distribution systems, and can contain both Standard Planning Data and Detailed Planning Data.
3. **Registered Project Planning Data (except for Low Voltage customers)** – An update of Committed Project Planning Data with the actual values or updated forecasts, which is required prior to a physical connection being made to the distribution network. Again, this may contain both Standard Planning and Detailed Planning Data.

DPC6 sets out technical requirements for connection for all users except for LV connected customers who do not have generation, and have a supply rated at 100 Amps or less (i.e. typical householders). The requirements cover the following areas:

- Protection.
- Earthing.
- Fault level considerations.
- Capacitive and inductive effects (the user providing information to the DNO on capacitor banks and reactors, if applicable).
- Communications and telemetry equipment (for routine and emergency communication between the DNO and the user, and for system monitoring).

3.2.4 Embedded Generators (DPC7)

Embedded generation is generation that is directly connected to the distribution system. It is also known as Distributed Generation (DG) or Customer with Own Generation (or CWOOG, a defined term in the Distribution Code). Embedded generation can have a significant effect on distribution systems and the DNO needs to assess the impact of specific projects. DPC7 contains the information and data required from embedded generators for DNOs to assess the impact of their generation on the distribution system, and in certain circumstances DNOs need to pass information on to National Grid so that they can assess any implications on the transmission network. The detailed technical requirements that apply to embedded generators are also set out in DPC7, although it is important to note that requirements in other sections of the Distribution Code also apply.

3 Overview of the Distribution Code Content

In England and Wales embedded generators sized between 50MW and 100MW are bound by some Grid Code requirements. However, as they have no relationship with National Grid, these Grid Code requirements are reflected in Distribution Code requirements (Sections DPC7.5 and DOC5.6). In Scotland the Grid Code requirements apply in full to generation with a capacity greater than 30MW in Scottish Power Transmission's area, and to generation with a capacity greater than 10MW in Scottish Hydro Electric Transmission's area. Across Great Britain parts of the Grid Code also apply to those participating in the Balancing Mechanism.

The Distribution Code requirements in respect of embedded generation do not apply to customers who have domestic or micro generation complying with Engineering Recommendation G83 – "Recommendations For The Connection of Type Tested Small-Scale Embedded Generators (Up To 16A Per Phase) In Parallel With Public Low-Voltage Distribution Networks".

3.3 DISTRIBUTION OPERATING CODE (DOC)

Once a user is connected to the distribution system, DNOs require certain information to be able to effectively operate the distribution system. The Distribution Operating Code (DOC) contains:

1. The operating procedures at the interface between DNOs and users.
2. The requirements for certain users of the distribution system to provide data to the DNO (e.g. on load forecasts and/or generation output), so that the DNO can operate the system efficiently and maintain stability.

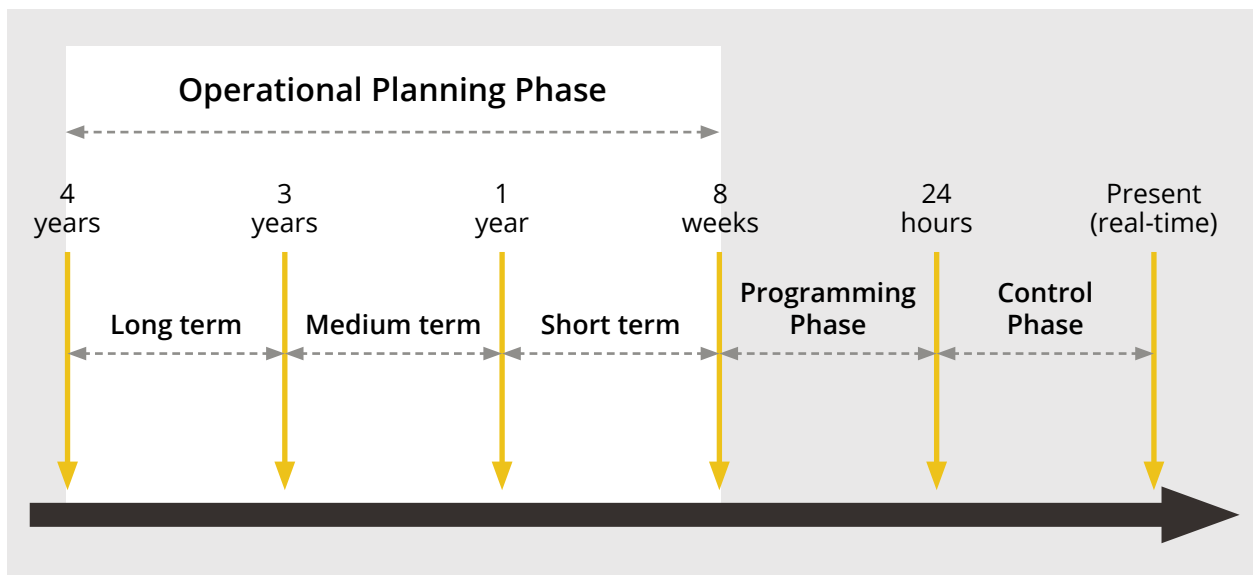
The DOC covers ten different aspects of information exchange or procedures, which are applicable to different groups of users. The table at the end of this chapter summarises the requirements for different users. An overview of each DOC is listed below:

1. **Demand Forecasts** (DOC1): Generators and customers whose demand is greater than 5MW must provide information to DNOs, when requested, about their forecast demand or generation.
2. **Operational Planning** (DOC2): Users (mainly embedded generators) must provide their outage programme to the DNO, and the DNO provides certain users (e.g. High Voltage demand customers) with information on possible constraints on their system. The timescales for exchanging data with the DNO are defined in DOC appendices and are illustrated in Figure 7.
3. **Testing and Monitoring** (DOC5): The DNO may need to test the quality of supply or the active/reactive power transfer at the point of connection with users. If they need to do this they will advise the user about it, and the user will be able to witness the tests and/or access the results. If the user is not operating within the parameters in the Connection Agreement, they could ultimately be disconnected from the distribution system.
4. **Demand Control** (DOC6): In an emergency the DNO may need to reduce load on all or part of the distribution system, for example if a generator has broken down and there is not enough supply to meet demand. DOC6 sets out a variety of methods to achieve load reduction.
5. **Operational Liaison** (DOC7): DNOs and users may need to exchange operational information or information about events. These events can include potential system disturbances. In order to do this, an effective means of communication needs to be established. The DNO needs to be regularly updated with contact information.
6. **Safety Co-ordination** (DOC8): To ensure the safety of people working on the network or plant, this section sets out the responsibilities and requirements when working at or across the operational and ownership boundaries with the DNO's system.

3 Overview of the Distribution Code Content

7. **Contingency Planning** (DOC9): If there is a partial or complete failure of the distribution or transmission systems, or a civil emergency, the procedures to follow are described in this section.
8. **Reporting** (DOC10): Any major incident, such as a fault on a customer's system, must be reported by the customer to the DNO. Oral reports must be confirmed by a full written report as soon as possible after the incident. This generally applies to HV customers.
9. **Numbering and Nomenclature** (DOC11): The DNO will provide customers with circuits or apparatus at ownership boundaries with numbering/nomenclature.
10. **System Test** (DOC12): If a DNO or user intends to carry out a system test which may affect other customers the DNO must inform all affected customers in writing, giving details of the nature and purpose of the proposed system tests. There are time periods in the Distribution Code for giving customers prior warning of any tests.

Figure 7. Data Input Timescales



3.4 DISTRIBUTION DATA REGISTRATION CODE

The Distribution Data Registration Code summarises the information exchanged between the DNO and users, required throughout the Distribution Code.

Data required by the DNO is allocated to one of three categories:

1. **Standard Planning Data:** Data listed in the Planning and Connection Code (DPC) which is required to be supplied by all users when applying for a connection.
2. **Detailed Planning Data:** Data listed in the Planning and Connection Code (DPC) which is required to be supplied by the user when requested by the DNO. This is more specific data relating to demand, fluctuating loads, etc., which could adversely affect the distribution system. For smaller embedded generators there may be some relaxation of the requirement to provide detailed planning data. This will depend on your generating capacity and location within the system.
3. **Operational Data:** Data which is required by the Distribution Operating Code (DOC) and should be supplied within the timetables in the relevant operating codes.

3 Overview of the Distribution Code Content

3.4.1 Procedures and Responsibilities

Data must be submitted to the DNO in writing and, where required, in the format of the schedules included in the Distribution Data Registration Code. These schedules are structured to serve as standard formats for data submission. The Distribution Data Registration Code identifies procedures in the event that users may wish to change data submitted or already registered with the DNO. There is provision for the DNO to estimate data which users have failed to supply. However, DNOs must notify users in writing of any estimated data it intends to use. A specific requirement of the Planning Code is that Registered Data is updated by users on an annual basis.

3.5 SUPPORTING DOCUMENTS

As noted in Section 2.3 of this document, some requirements of the Distribution Code are implemented through other industry documents. A list of these is provided in Annex 1 of the Distribution Code. These are primarily Engineering Recommendations, containing detailed technical requirements in certain areas.

There are other industry documents which are not implemented via the Distribution Code, but do have a material impact on distribution system users. These are listed in Annex 2 of the Distribution Code.

Copies of these Engineering Recommendations, Technical Specifications and other documents are available from:

Energy Networks Association
6th Floor, Dean Bradley House
52 Horseferry Road
London SW1P 2AF
www.energynetworks.org

3.6 USER COMPLIANCE WITH THE DISTRIBUTION CODE

It will have become apparent from the above that different parts of the Distribution Code apply to different categories of users. Table 2 illustrates which parts of the Distribution Code are:

- Not applicable (X)
- Applicable with specific obligations (D)
- Relevant for information, but with no specific obligations (R).

Different categories of user are summarised in the second table (Table 3).

3 Overview of the Distribution Code Content

Table 2. Sections of the Distribution Code applying to different categories of users

	HV Customers (1kV or above)				LV Customers (below 1kV)						Other Parties		
	DG ≥ 1MW	DG > 1MW	Demand ≥ 5MW	Demand > 5MW	DG	Sole Customer	Demand > 100A	DG ≤ 100A	Unmetered	G83 DG	Suppliers	Other Authorised Distributors	Meter Operators
D Code Ref	A1	A2	A3	A4	B1	B2	B3	B4	B5	B6	C	D	E
DCG	D	D	D	D	D	D	D	D	D	D	D	D	D
DCP1	R	R	R	R	R	R	R	R	R	R	R	R	R
DCP2	R	R	R	R	R	R	R	R	R	R	R	R	R
DCP3	R	R	R	R	R	R	R	R	R	R	R	R	R
DCP4	D	D	D	D	D	D	D	D	D	D	R	D	D
DCP5	D	D	D	D	D	D	D	D	D	D	R	D	D
DCP6	D	D	D	D	D	D	D	X	X	R	R	D	D
DCP7	D	D	X	X	D	X	X	X	X	R	R	D	X
DCP8	D	D	D	D	X	X	X	X	X	X	R	D	X
DOC1	D	X	D	X	X	X	X	X	X	X	D	D	X
DOC2	D	X	D	X	X	X	X	X	X	X	D	D	X
DOC5	D	D	D	D	D	D	D	D	D	R	D	D	D
DOC6	D	D	D	D	R	R	R	R	R	R	D	D	X
DOC7	D	D	D	D	X	X	X	X	X	R	D	D	X
DOC8	D	D	D	D	D	D	D	D	D	R	R	D	D
DOC9	D	D	D	D	R	R	R	R	R	R	R	D	R
DOC10	D	D	D	D	X	X	X	X	X	R	D	D	X
DOC11	D	D	D	D	D	D	D	X	D	X	X	D	D
DOC12	D	D	D	D	D	D	X	X	X	R	R	D	X
DDRC	D	D	D	D	D	X	X	X	X	R	D	D	X

3 Overview of the Distribution Code Content

The categories of user are defined more fully as follows.

Table 3. Categories of users of the distribution system

Category A users are those having a connection at 1kV or above (HV)	
A1	Embedded Generators including CWOs* having an output capacity of 1MW and above
A2	Embedded Generators including CWOs having an output capacity of less than 1MW
A3	Customers without generation having a Demand of 5MW and above**
A4	Customers without generation having a Demand of less than 5MW
Category B users are those having a connection at below 1kV (LV)	
B1	Embedded Generators (including CWOs) irrespective of capacity of fuse(s) or other Protection device(s)
B2	Customers who are the sole Customer with a connection to the Low Voltage side of a High Voltage to Low Voltage transformer, irrespective of the capacity of fuse(s) or other protection device(s)
B3	Customers without generation and having a single or three phase supply protected by fuse(s) or other device(s) rated at more than 100 amps
B4	Customers without generation having a single phase or three phase supply protected by a fuse(s) or other device(s) rated at 100 amps or less
B5	Customers with Unmetered Supplies
B6	Customers who have connected a Generation Set in accordance with EREC G83 and where this is their only Generation Set
Other Parties	
C	Suppliers including licence exempt Suppliers, unless otherwise stated
D	Other Authorised Distributors connected to the DNO's distribution system, being licensed or licence exempt Distributors
E	Meter Operators (This Distribution Code does not place any direct obligation on Meter Operators other than through the appointment by either a Supplier or a Customer.)

* CWO = Customer With Own Generation

** The classification threshold of 5MW is related to the obligations that a DNO has for providing aggregated demand information to National Grid. Generators are further classified by voltage of connection and capacity for the purposes of technical standards.

4 Distribution Code Modification

Key points:

- DNOs are required to maintain a Distribution Code Review Panel (DCRP). The DCRP maintains an ongoing review of the Distribution Code.
- Users can raise issues and suggestions for change to the Distribution Code with the DCRP at any time.
- The DCRP follows a modification process, as outlined in the Constitution and Rules of the Distribution Code Review Panel. This process can include establishing working groups to review issues, public consultation periods and reports to Ofgem (the Authority).
- Some changes need to be approved by Ofgem (e.g. modifications to the Distribution Code and Annex 1 documents); other documents can be approved by DNOs (e.g. Annex 2 documents).

4.1 THE DISTRIBUTION CODE REVIEW PANEL (DCRP)

The DNOs are required in their licence conditions to maintain a Distribution Code Review Panel (DCRP). This comprises representatives of the DNOs, Ofgem and users of the distribution system, including generators and suppliers. The DCRP maintains an ongoing review of the Distribution Code and its workings. DGC4 of the Distribution Code sets out the aims and objectives of the DCRP, and well as details of which stakeholders should be members.

As the electricity industry changes and evolves it becomes necessary to modify the Distribution Code to reflect these new developments and alterations. Furthermore, to reflect changes to the Distribution Licences and increased regulations coming in from Europe, modifications to the current Distribution Code will be needed. The procedure for modifying the Distribution Code is set out in Standard Licence Condition 21 of the Distribution Licence, and more fully in the Constitution and Rules of the DCRP:

www.dcode.org.uk/panels/the-gb-distribution-code-review-panel

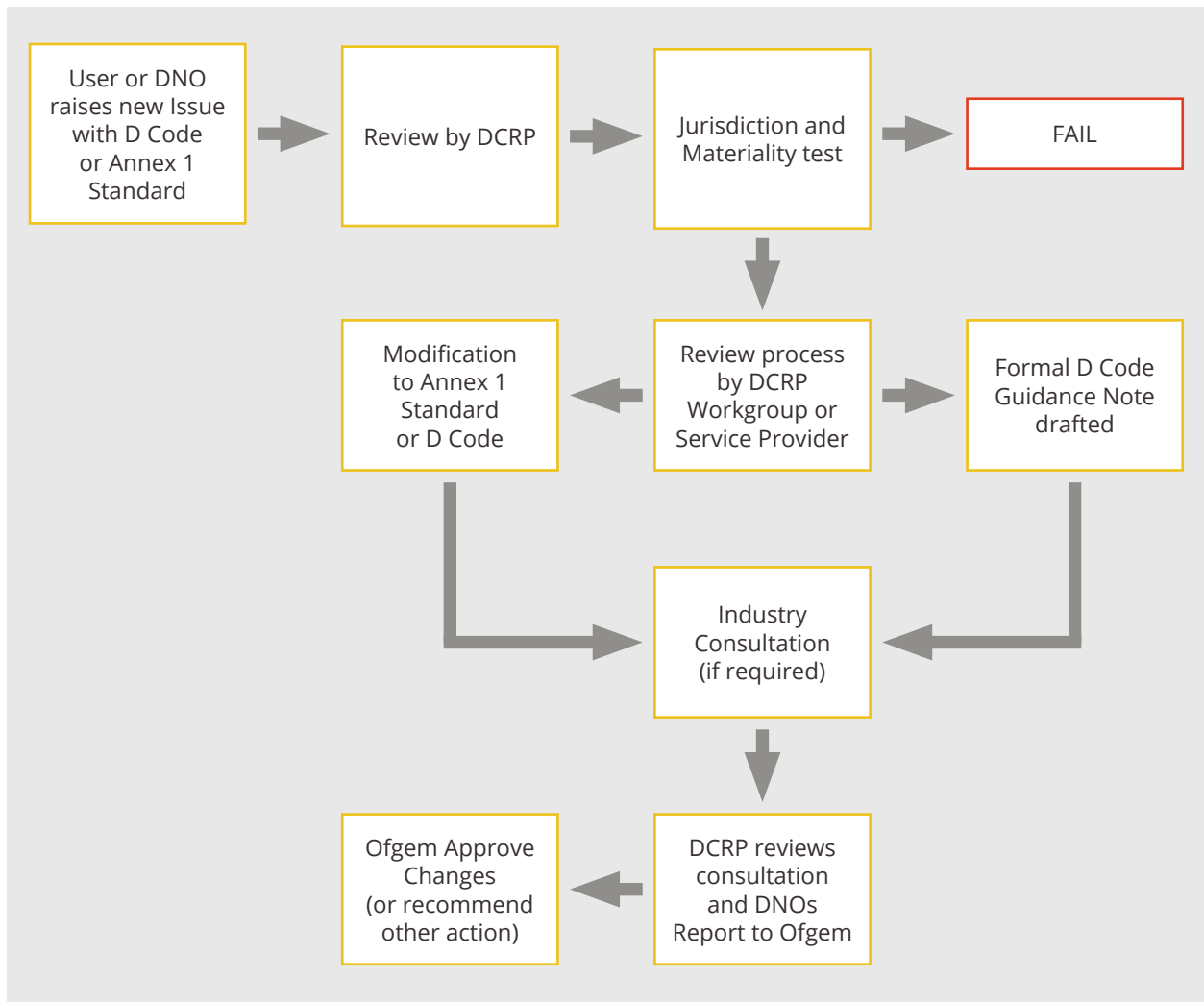
Users can pass to the DCRP suggestions for changes to the Distribution Code at any time. The Distribution Code Administrator will provide guidance to users in proposing changes. Users can also ask the DCRP to issue guidance in relation to the implementation, performance and interpretation of the Distribution Code.

4 Distribution Code Modification

4.2 OVERVIEW OF DISTRIBUTION CODE MODIFICATION PROCESS

The flow chart below gives a high level overview of the process for making modifications to the Distribution Code (or Annex 1 documents). Details of this process can be found in the DCRP Standard Procedure 1 – Governance of Qualifying Standards, in the Constitution and Rules of the DCRP.

Figure 8. Procedure for amending the Distribution Code and Annex 1 Standards (from the Constitution and Rules of the Distribution Code Review Panel of Great Britain)



The steps in the process are described more fully in the following sections.

4.2.1 Progressing a Distribution Code Modification

DNOs or users may raise a Distribution Code issue. For the avoidance of doubt, an issue is not a modification – rather it is a matter that could be developed into a modification (e.g. a concern over the practical implications of a test requirement). Raising a Distribution Code issue is normally done in writing, although the party raising the issue may be given the opportunity to present their concern to the DCRP.

4 Distribution Code Modification

The issue raised is reviewed by the DCRP, and considered against the following tests:

- Jurisdiction – is it an issue relating to a qualifying standard (Distribution Code Annex 1 standard, Annex 2 standard or an individual DNO standard)?
- Materiality – for example, what impact does the issue have on competition, distributed generation, etc.?

If the issue does not pass these tests, the user who raised the issue will be notified of this (which may include being invited to a DCRP meeting), and given the reasons for the decision reached by the DCRP.

If the issue does pass the tests, the DCRP will also consider factors such as whether the issue is of relevance to other Network Code Review Panels, and whether a working group is required to address the issue. The formation of working groups is described in the next section.

4.2.2 Working Groups

When the DCRP thinks an issue requires further development, it may be referred to a working group prior to it being released for industry consultation. The issue proposer will usually draft Terms of Reference (ToR) for the working group which will help to identify the issues which need discussing. These ToR need to be approved by the DCRP. Every working group has a Chair and a Technical Secretary and a cross section of members from across the industry to give a balanced view on the topic.

The Technical Secretary will, in line with the agreed ToR:

- Arrange meetings.
- Take minutes and ensure documentation of meetings is published on the DCode website.
- Assist with the writing of the working group report.

It is expected that there will be an update on the progress of the working groups at each DCRP meeting whilst the working group is ongoing.

The working group will produce a final report, which should describe the issue, provide an overview of the discussions, the findings of the working group, a recommendation and how the modification proposed to address the issue sits against the overall Distribution Code objectives. Any interaction which the Distribution Code modification would have with other Codes or industry documentation is also noted.

If the working group, for any reason, has been in existence for more than a year, an annual update is required. This will contain the current progress, reasons for delays, next steps and likely conclusion dates.

After discussions at DCRP meetings on the report produced by the working group, the issue can be deemed completed against its ToR and can be recommended to proceed to industry consultation. If the ToR is not fulfilled then the working group will continue and subsequently resubmit to the DCRP in an agreed timescale.

Any review must include an evaluation of whether any proposed modification to the Distribution Code would better facilitate the achievement of the Distribution Code objectives.

4.2.3 Consultation

When a Distribution Code modification is proposed, the DCRP is required by its licence conditions to consult with all Authorised Electricity Operators who may be affected by the modification. Modifications usually proceed to public consultation (also known as industry consultation).

4 Distribution Code Modification

When an issue has been referred to industry consultation, the DCRP will prepare an industry consultation document. This will be distributed to industry and published on the Distribution Code website.⁴ Feedback on the proposal is then sought from interested parties. Provisional legal text is included in the consultation document to enable the effect of the proposed changes to be seen. Also included is a summary of the discussions which the working group had on the issue (if a working group was formed) and their recommendations.

The consultation document should contain:

- Reasons for the proposed modification.
- The implications for DNOs and users.
- The key points for consultation.
- An evaluation of whether the proposed modification would better facilitate the achievement of the Distribution Code objectives.
- An impact on greenhouse gas emissions.

The consultation period is agreed by the DCRP. The standard period for consultation is six weeks.

4.2.4 Report to Ofgem (the Authority)

Following the industry consultation period, the DCRP will collate and review the responses to determine the general industry consensus and whether the proposed modification should be submitted to Ofgem for approval (or rejection). If submission of a proposed modification is the general view of the industry, then the DCRP will write a report providing a summary of the responses obtained and the replies from the DCRP to those responses. This report will also be published on the Distribution Code website.

On receipt and review of the report, if Ofgem thinks that they require additional information or clarification they will contact the DCRP to obtain this. If after review of the report, Ofgem cannot form a decision based upon the content of consultations which are presented to them, they can return the issue to the DCRP (and the working group, if applicable) to obtain further feedback. This 'Send-back' process is in place to safeguard Ofgem from having to reject a proposal when there are limited alterations required, such as minor revisions to legal text, technical points or clerical changes. When sending an issue back to the DCRP Ofgem can include the areas of development which may need expansion for a decision to be made.

Depending on the clarification required by Ofgem, further actions may be discussed with the working group, if there was one. Alternatively the modification may be withdrawn until further actions can be taken to address issues highlighted by Ofgem.

Ofgem will decide whether the modification proposal developed throughout the process should be approved to be implemented. Following the decision by Ofgem, their decision will be published on the Distribution Code website.

Should a modification to the Distribution Code be approved by Ofgem, the DCRP Secretary will ensure that the decision letter is circulated amongst industry and interested parties and also published on the Distribution Code website. Furthermore, they will ensure that changes related to the modification are made to the Distribution Code and that the updated version is uploaded to the website to replace the existing version. All of these modifications are to be undertaken within the proposed timescales.

If a modification is rejected by Ofgem then the decision letter will also be circulated amongst industry and interested parties as well as being uploaded to the Distribution Code website. The Distribution Code will remain unchanged.

⁴ Open and closed consultations can be found at: www.dcode.org.uk/consultations

4 Distribution Code Modification

4.3 GOVERNANCE OF TECHNICAL STANDARDS

As well as overseeing governance for the Distribution Code, other industry interface standards are open to collective governance by the DCRP. There are three broad classes of standards as detailed below.

4.3.1 Distribution Code Standards

Some standards impose Distribution Code obligations, and these are listed in Annex 1 of the Distribution Code. These standards implement Distribution Code requirements and are cited in preference to stating the detail of the requirements in the Distribution Code itself. The content of these standards is subject to the governance of the DCRP which will consult publicly on them, although ownership of the standards rests with the DNOs. Ofgem has to give final approval to any changes to these standards.

4.3.2 Other Industry Standards

There are other standards that do not impose direct Distribution Code obligations, but are nevertheless considered to be material and binding on DNOs and users, and are subject to governance by the DCRP. These are listed in Annex 2 of the Distribution Code. These standards are governed in a similar manner to Annex 1 standards. The salient difference is that Ofgem does not need to formally approve changes to these standards. However, Ofgem may approve them should the DCRP fail to agree on changes to them.

4.3.3 Individual DNO's Standards

These are not directly governed by the DCRP, but by exception the DCRP can review an individual DNO standard if the DCRP's advice is sought by Ofgem following a referral to Ofgem of an issue with an individual DNO standard by a user. Ofgem may then take the DCRP's advice into account when resolving the user's complaint.

4.4 CODE GOVERNANCE REVIEW

Between 2007 and 2010 Ofgem undertook a Code Governance Review (CGR), to try to address deficiencies in industry code arrangements, including barriers to smaller stakeholders. The outcome of the Code Governance Review was a set of proposals, including simplifying and standardising the change process across industry codes, and a role for Ofgem in leading Significant Code Reviews. Ofgem considers it is timely to review the implementation of these proposals, and whether further reforms are required. At the time of writing, there is ongoing work on the governance of all industry codes, including the Distribution Code. See Ofgem's website for the latest information.

4.4.1 Code Administrator Code of Practice

One of the proposals that came out of the Code Governance Review was for a Code of Practice to be developed, to increase transparency in the code modification process across industry codes. The Code Administrators Code of Practice contains:

- Code Administration principles
- Modification process principles
- A common modification process.

At the time of writing, the Code Administrator for the Distribution Code is the Energy Networks Association (ENA). The Code Administrator's Code of Practice is available to download from the DCode website: www.dcode.org.uk/code-administration

Appendix 1 Relationship Between the Distribution Code and the Grid Code

It is a requirement of Licences that Codes be prepared and at all times be in force covering all technical aspects relating to:

- Connection to networks.
- The planning, operation and use of interconnected networks.
- The operation of electrical lines and electrical plant and apparatus connected to that system.

There are two such Codes that apply to the appropriate parts of the network and to those who are connected to it:

1. The **Grid Code**, which is a condition of the Transmission Licence and relates to the transmission system and connections to it.
2. The **Distribution Code**, which is a condition of the Distribution Licence and relates to the distribution system and connections to it.

The Grid Code and the Distribution Code are approved by the Ofgem, the Office of Gas and Electricity Markets. Ofgem fulfils the function of the Authority and is essential to ensure that the total electricity supply system operates efficiently, so as to provide, as far as is reasonably practicable, a secure high quality supply to customers.

The following two diagrams illustrate the relationship between the Distribution Code and the Grid Code.

National Grid has produced a summary document of the Grid Code, as well as other National Grid industry Codes. These can be found on the National Grid website:

www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Code-Summaries

Figure 9. Grid Code and Distribution Code boundaries (Scotland)

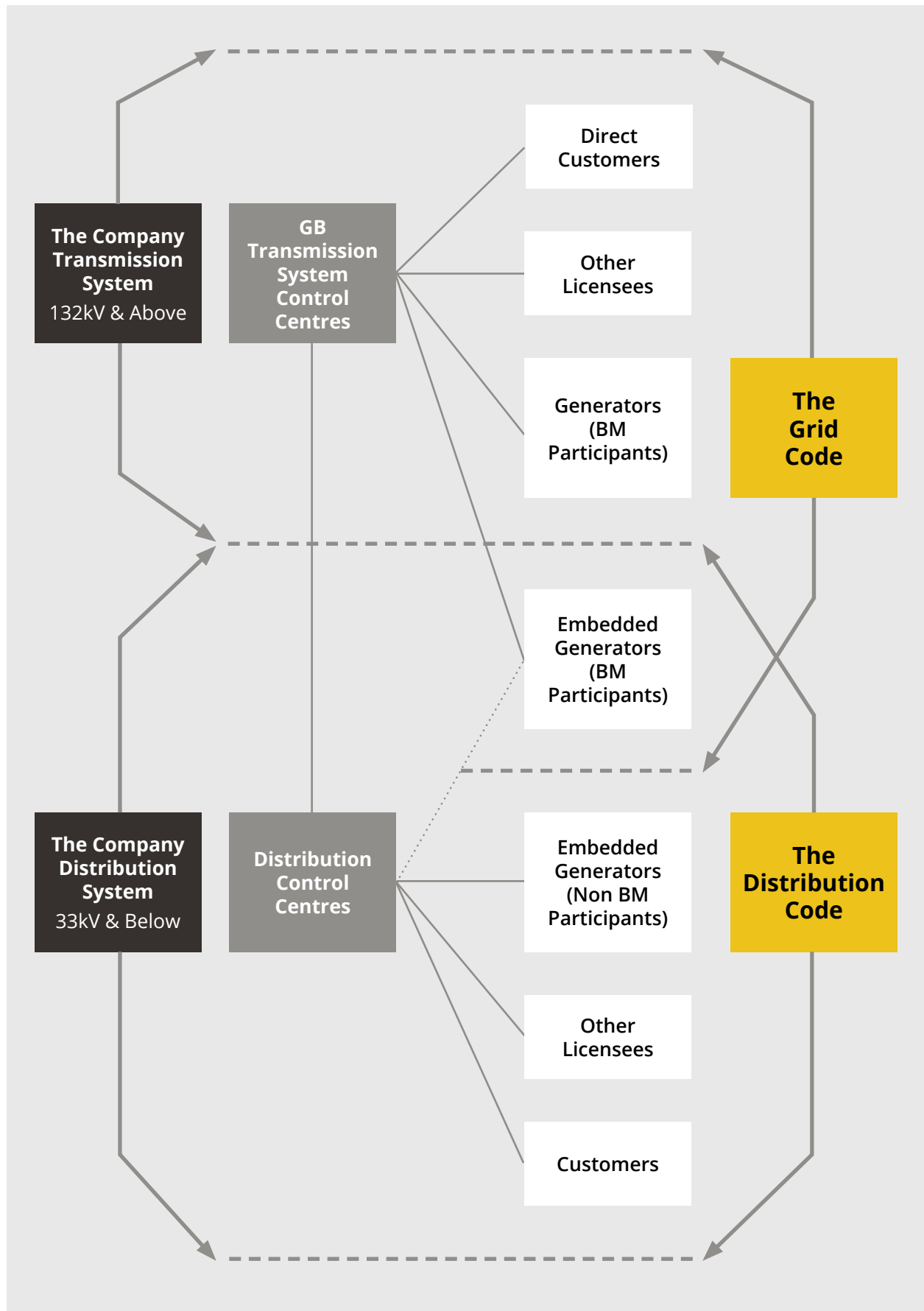
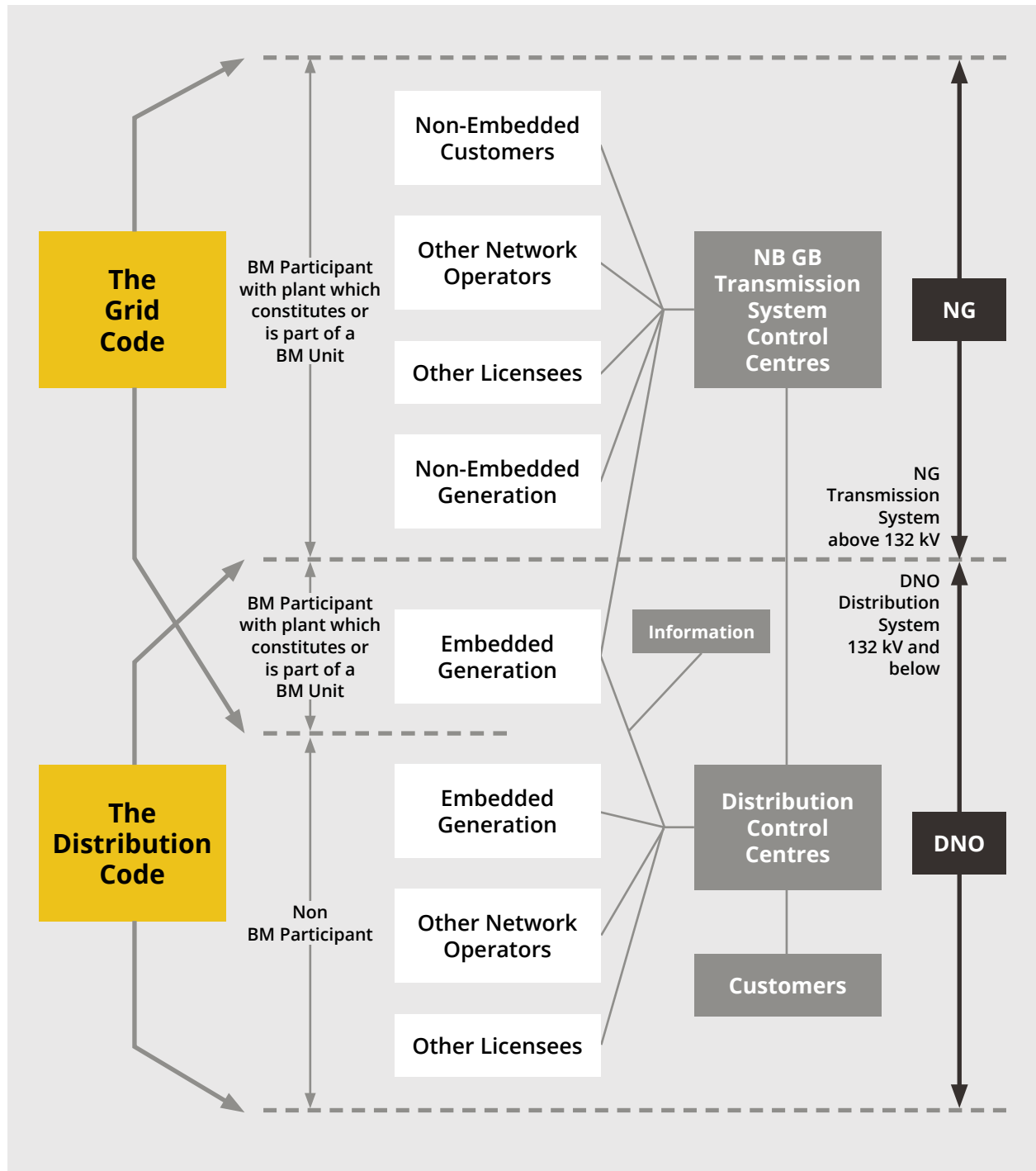


Figure 10. Grid Code and Distribution Code boundaries (England and Wales)



Appendix 2 Connection to the Distribution System

A2.1 APPLICATION FOR CONNECTION PROCEDURES

Anyone seeking to connect to the distribution system, or modify an existing connection, must make their application using standard application forms. These are available on the DNO's website. There are different application forms for different sizes of project. The DNO will provide guidance on which application form should be used, as well as other guidance on connections and the connection process on their website.

Under the Competition in Connections policy, applicants for new or modified connections may wish to take responsibility for some aspects of the associated work. The DNO will provide details of the scope and implications of such work, known as contestable work, on request.

For generation connections DNOs have produced guidance documents on the connection process. These are called Distribution Generation Connection Guides. There are separate guidance documents for different types of generation connection (e.g. connecting under Engineering Recommendation G83 or G59), and both full and summary documents are available. The Guides are available free of charge on the ENA website:

www.energynetworks.org/electricity/engineering/distributed-generation/distributed-generation.html

A2.2 TYPICAL AREAS FOR DISCUSSION

During the application process the following is typical of the issues discussed.

- a. Can the amount of power required be provided by the local system without major upgrading, and at reasonable cost? If not, how much will it take before a major upgrade is required?
- b. If there are network constraints, what are they? Is the user able to operate their new or modified requirements within these constraints? A constraint may reflect a system capacity limit when the distribution system is switched off for maintenance work. This may be for as little as one day per annum, or substantially longer and more frequent.
- c. Are there any major upgrading works scheduled in the area over the next 5 years which will reduce any connection costs?
- d. By how much can the required supply capacity be increased without necessitating major upgrading? If a system upgrade is required what are the mechanisms for allocating the costs and benefits associated with the upgrade?
- e. What is the appropriate supply or connection voltage? Are there other options and what are the implications of the other options?
- f. How reliable is the supply (in statistical terms)? How will the supply be provided? Will it be mainly by overhead line, or by underground cable?
- g. Is Active Network Management an option to speed up the connection and reduce the costs?

More information about Active Network Management can be found at:

www.energynetworks.org/assets/files/news/publications/1500205_ENA_ANM_report_AW_online.pdf

A2.3 CONNECTION TYPES

There are two types of connection to the DNO's distribution system, namely:

1. **Entry Point:** The connection between the DNO's distribution system and the point where electricity enters the system, usually from the transmission system or an embedded generator.
2. **Exit Point:** The connection between the DNO's distribution system and either the premises where the electricity is consumed or, in some cases, another distribution system (owned, for example, by another distributor and termed Other Authorised Distributor).

Note: A connection may be an Entry and an Exit Point (e.g. Customer with Own Generation).

The DNO's distribution system may be used:

- a. To transport electricity between Entry and Exit Points.
- b. For the provision of standby and/or top-up supplies of electricity (where standby supplies cover your demand in exceptional circumstances, such as generation outages and top-up supplies cover any routine shortfall between the output of your generating units and the demand on your site, and are generally used frequently).

A2.4 REQUIREMENT TO OFFER TERMS

DNOs are required by the Distribution Licence to offer terms under which they are prepared to enter into an agreement with the applicant for establishing the proposed new or modified connection to and/or use of the DNO's distribution system.

The offer will be made as soon as is practicable after receipt of an application containing all required information. As set out in the Distribution Licence (Standard Licence Condition 12), unless otherwise agreed with Ofgem, offers must be made by the DNO:

- Within 28 days in the case of an application for use of system only.
- Within 3 months (65 working days) in the case of an application for connection or use of system with connection.

The offer will specify any works required for the extension or reinforcement of the DNO's distribution system or the transmission system and any legal consents needed.

If the connection results in the need for a complicated reinforcement to the distribution system then the DNO may give a preliminary connection offer, and be allowed more time by Ofgem to fully assess the reinforcement options.

For more information on the timescales for distributed generation connections, particularly in reference to quotations for work, refer to the Distributed Generation Connection Guides.

A2.5 RIGHT TO REJECT AN APPLICATION

As noted in Part F of Standard Licence Condition 12, the DNO shall reject an application for connection to or use of the DNO's distribution system only if:

- It considers that any offer of terms for establishment of the proposed arrangements would place the DNO in breach of statutory obligations or other regulatory or licence conditions.
- The applicant does not agree to comply with the Distribution Code.

A2.6 CONNECTION AGREEMENTS AND USE OF SYSTEM AGREEMENTS

Use of the distribution system may require a customer to sign a specific agreement(s) with the DNO. The following list of Agreements is given as a guide and is not intended to be exhaustive.

- a. Large power customers shall be required to sign a Connection Agreement. In most cases low voltage customers will only be required to sign a Supply Agreement with their supplier.
- b. Embedded Generators shall be required to sign an Embedded Generator Connection Agreement, including specific technical and operating requirements, and may also require a Use of System Agreement.
- c. Suppliers shall be required to sign a Use of System Agreement.
- d. Top up and Standby Agreements may be required by:
 - i. A Supplier.
 - ii. A Customer with Own Generation.
 - iii. A Customer with an alternative supply not provided via the DNO's distribution system.

A prospective user, once committed by signature of a Connection/Use of System Agreement, is termed a "Committed User".

A Connection/Use of System Agreement will constitute a contract between the DNO and the user, including as appropriate within its terms and conditions:

- a. A condition requiring both parties to comply with the Distribution Code.
- b. Details of the rates forming the basis of Use of System Charges.
- c. Details of capital related payments arising from necessary reinforcement or extension of the distribution or transmission system.
- d. Details of any ongoing charges for special services such as regular ongoing system studies or abnormal system management requirements.
- e. A condition requiring both parties to sign a Site Responsibility Schedule, detailing the divisions of responsibility at interface sites in relation to ownership, control, operation, maintenance of plant and apparatus and to safety of persons.

Detailed costing arrangements for the supply of standby and top-up facilities shall be the subject of a Top-up and Standby Supply Agreement. Top-up and standby supplies may be required to cover any shortfall in contract quantities of electricity delivered by a generator to a supplier under a Connection/Use of System Agreement.

A2.7 CONSENTS AND STATUTORY OBLIGATIONS

Depending on the size and type of a user's installation which is to be connected to the DNO's distribution system, a user may have obligations to obtain consents and satisfy statutory obligations associated with the connection (as referred to in DPC1.5).

An offer by the DNO to a user for connection or use of the DNO's distribution system may be conditional upon the outcome of any or all of the following procedures. These procedures relate to an extension or reinforcement of the DNO's distribution system or the transmission system to permit a development by the user:

- a. An application for planning consent.
- b. Negotiations with landowners or occupiers for consent to place plant and apparatus on or across their land.
- c. The submission of an environmental assessment statement.
- d. A public inquiry.

A user whose development requires the DNO to engage in any of the above procedures, or any other statutory procedure which would not otherwise be necessary, shall:

- a. Provide any necessary supporting information or evidence.
- b. Ensure attendance at a Public Inquiry by such witness as the DNO may reasonably request.
- c. Bear the cost incurred in compliance with the two points above.

If planning consent is granted, but is conditional upon a change in the design arrangements originally offered by the DNO (e.g. the use of an underground cable rather than an overhead line), then the DNO will make a revised offer, including revised terms and timing. This revised offer will form the basis of any Connection Agreement/Distribution Use of System Agreement.

If any necessary consent is not granted, the DNO is not obliged to fulfil any Connection Agreement/Distribution Use of System Agreement.

A2.8 INFORMATION PROVIDED BY THE DNO

Once committed by signature the Connection/Use of System Agreement constitutes a contract between the DNO and the user. A signed contract may reduce the scope for referring areas of dispute to Ofgem for determination. Users may wish to discuss these issues with Ofgem to satisfy themselves in this respect before signing a contract.

The contract includes a condition requiring both parties to comply with the Distribution Code. In particular, for connection at High Voltage both parties are required to sign a Site Responsibility Schedule. This details the division of responsibility of ownership, control, operation and maintenance of plant.

The Connection/Use of System Agreement requires the DNO to provide:

- a. Details of any capital payments arising from necessary reinforcement or extension to the distribution system or transmission system, if required.
- b. Detailed costing arrangements for the supply of Top-up and standby facilities for customers with distributed generation.

A2.9 APPROVAL TO CONNECT

Depending on the size and type of a user's installation a DNO may specify procedures to approve the technical compliance of the user's installation and commissioning procedures to energise the connection, as provided for in DPC5.3.3. These procedures may have some or all of the typical features specified below:

A2.9.1 Readiness to Connect

A user whose development is under construction in accordance with a Connection Agreement and who wishes to establish connection with the DNO's distribution system, shall apply to the DNO in writing, stating readiness to connect and giving the following:

- a. Confirmation that the user's installation complies with the principles outlined in Regulation 25(2) (a) of the Electricity Safety, Quality and Continuity Regulations.
- b. Where appropriate update the Distribution Planning and Connection Code data based on actual values.
- c. Where appropriate update forecasts for future operational data as listed in the Distribution Data Registration Code.
- d. A proposed connection date.

In addition to a written application to the DNO for connection, the DNO may request a report from the user certifying that all matters required by DPC4 have been considered, and that DPC5 to DPC8 inclusive have been complied with by the user, incorporating:

- a. Type test reports and test certificates produced by Nationally Accredited Laboratories, showing that the plant and/or apparatus specified in the Distribution Planning and Connection Code meet the criteria specified.
- b. Copies of the manufacturers' test certificates relating to plant and/or apparatus referred to in the Distribution Planning and Connection Code, including measurements of positive and zero sequence impedance of apparatus which will contribute to the fault current at the point of connection.
- c. Details of protection arrangements and settings under DPC6.3.
- d. A certificate declaring the maximum short circuit current in Amperes which the user's system would contribute to a three- phase short circuit at the point of connection, and the minimum zero sequence impedance of the user's system at the connection point, taking into account the contributions of any generation set or power station motors.
- e. Confirmation that the design conforms with the standards referred to in DPC4.
- f. A list of people appointed by the user to undertake, and to be responsible for, the application and removal of safety precautions on the parts of the user's system which are directly connected to the DNO's distribution system.
- g. A list of names and telephone numbers of responsible management representatives (in accordance with Distribution Operating Code DOC9).
- h. "Site Common Drawings" as specified in the Connection Agreement.
- i. A single line diagram of the user's apparatus showing all items to which the Distribution Planning and Connection Code applies.
- j. Information to enable the DNO to prepare a Site Responsibility Schedule (as in DPC5.4.3).

For connections at High Voltage, the user shall provide a proposed commissioning programme. This commissioning programme should give at least six weeks' notice of the proposed connection date, and detail all proposed site testing of main and ancillary equipment, together with the names of the organisations who will carry out such testing.

The DNO is entitled to witness site testing of equipment whose performance may affect the integrity of the DNO's distribution system. The user shall provide the DNO with certified results of all such tests. The DNO may withhold agreement to energise the user's equipment where test results indicate that they have not complied with the Distribution Planning and Connection Code.

In advance of the proposed connection date, if a generator requires connection to the DNO distribution system for the purpose of testing, they should satisfy the DNO of the following:

- a. Compliance with the requirements of the Connection Agreement.
- b. Provision of a commissioning programme supplied by the generator and agreed with the DNO to allow commissioning tests to be co-ordinated in a manner detailed in Distribution Operating Code DOC-12 – "System Tests".

A2.10 CONFIRMATION OF APPROVAL TO CONNECT

The DNO shall inform the user:

- Whether or not they consider the requirements of 6.4 and requirements of the Distribution Planning and Connection Code are satisfied.
- If making the connection is approved subject to satisfactory results of tests which cannot be performed prior to energization of the user's plant and apparatus.

Where approval is withheld, the DNO will provide detailed reasons.

When indicating agreement to the energization of a connection, the DNO will specify the contents and sequence of the energization programme and associated testing. The DNO is entitled to postpone or suspend the programme where, due to circumstances which could not reasonably have been foreseen by the DNO, continuation of the programme would impose an unacceptable level of risk to the integrity of the their distribution system.