



**Long Term Development Statement for  
Western Power Distribution (West  
Midlands) plc's  
Electricity Distribution System  
November 2011**

**Introductory Section  
(PART ONE ONLY)**

Western Power Distribution (West Midlands) plc  
Registered in England & Wales No.3600574  
Registered Office:  
Avonbank, Feeder Road, Bristol BS2 0TB

Although all reasonable efforts have been made to ensure the accuracy of data provided in this statement, Western Power Distribution (West Midlands) plc (here after referred to as 'WPD') does not accept any liability for the accuracy of the information contained herein and, in particular neither WPD nor its directors or employees shall be under any liability for any error or misstatement or opinion on which the recipient of this Statement relies or seeks to rely.

No part of this Statement may be reproduced, transmitted or further distributed in any form or any means electronic, mechanical, photocopying, recording or otherwise for any purpose other than with the written permission of WPD.

## **Western Power Distribution – Company Profile**

Western Power Distribution is owned by PPL Global LLC, a subsidiary of PPL Corporation of Allentown, Pennsylvania.

Western Power Distribution (West Midlands) plc (here after referred to as ‘WPD’) is responsible for just over 2.5 million customers in a 13,000 sq km service area in West Midlands.

Western Power Distribution also delivers electricity to the South West, South and South West Wales and East Midlands distribution areas.

The company employs over 6,250 staff across the four Distribution Areas.

As a distribution business we own the distribution system assets including 216,000km of network and 184,000 transformers plus associated switchgear. We are responsible for:

- Maintaining the electricity network on a daily basis
- Repairing the electricity network when faults occur
- Reinforcing the electricity network to cope with changes in the pattern of demand
- Extending the network to connect new customers

WPD is not involved in either the buying or selling of electricity to end use customers, which is the responsibility of electricity supply companies. For a list of supply companies please visit [www.ofgem.gov.uk](http://www.ofgem.gov.uk). WPD provides the electrical network to distribute electricity to these customers.

This statement covers the network in West Midlands.

The region covered by the Company’s distribution networks includes the majority of the West Midlands conurbation, with the exception of Coventry and Warwick. It extends from Congleton in the north to the outskirts of Bristol in the south; and from Knighton and the Welsh Marches in the west to Banbury in the east.

The Company’s 132kV networks are a mix of mesh and radial systems, with some 132kV interconnection between adjoining networks. Grid supply points are not normally operated in parallel except for the Shrewsbury and Ironbridge groups. Otherwise, the use of 132kV interconnection between grid supply points for load transfer is under strictly controlled conditions to avoid detrimental effects to the transmission system and to ensure fault levels are kept within safe limits.

The Company has extensive 66kV networks. These mesh and radial networks cover large rural areas, especially the north Cotswolds, Worcestershire, Herefordshire and the Welsh Marches. Networks at this voltage provide economic and reliable rural systems, permitting long feeding distances and being of robust construction. However, some parts of the 66kV network in north Worcestershire are ageing and would require

replacement over the next 5 – 10 years. The Company would consider reinforcement at the 66kV voltage level or conversion to 132/11kV transformation depending on the solution offering the optimum technical and economical value.

The majority of the inadequate and deteriorating urban 33kV networks emanating from Hams Hall will be removed in the next five years. At Hams Hall the voltage level will be replaced with 132/11kV transformation. The only remaining urban 33kV network is that emanating from Castle Meads in Gloucester.

Engineering depots are located in Birmingham, Gloucester, Hereford & Ludlow, Tipton, Worcester, Stoke, and Telford.

## **Contents**

### **PART 1 Summary/Introduction**

- 1.0 Purpose of Statement
- 2.0 Contents of statement
- 3.0 Contact details for further information
- 4.0 Small Scale Geographic diagram

## **Attachments**

- [Attachment 1.1](#) Standard Network Information Price List
- [Attachment 1.2](#) Useful documents and contacts

## **PART 1 Summary/Introduction**

This statement is in two parts. This first part provides an overview of the distribution network in West Midlands and describes the detailed information contained in part 2.

[Apply For Access to Full Statement](#)

### **1.0 Purpose of Statement**

This Statement has been compiled in accordance with Licence Condition 25, to assist existing and future users of Western Power Distribution's network in identifying and assessing opportunities available to them for making new or additional use of our Distribution System. It also gives contact details for specific enquiries.

The purposes of Licence Condition 25 are:

- (a) to secure the provision of information by the licensee which will assist any person who contemplates entering into distribution arrangements with the licensee to identify and evaluate the opportunities for doing so; and
- (b) to ensure the general availability of such information in the public domain.

### **2.0 Contents of statement**

The statement contains data on the 132kV, 66kV and 33kV systems and the transformation level to 11kV. Due to the volume of data and speed with which it can become outdated, data on the 11kV and LV systems has not been included in the statement. Data on the 11kV and LV systems is available on request - a price list for the provision of this data is included as [attachment 1.1](#).

The statement also provides high-level information on the design and operation of all voltage levels of the WPD distribution network.

The detailed information section, in part 2 of this statement, contains information/data on the following:

- Geographic plans showing WPD's 132kV, 66kV and 33kV systems within our geographic area of operation.
- Schematic diagrams detailing normal operating configurations of the distribution network
- Circuit data
- Transformer data
- Load information
- Fault level information
- Connected generators with a capacity greater than 5MW
- Areas of the network likely to reach the limit of their capability in the next 5 years
- All planned major developments to the system at 132kV, 66kV or 33kV that have financial authorisation to proceed and that will change the systems capability in the next two years. This excludes like for like replacements

(which will not change the systems capability) and changes to the system caused by a new user or by an existing user where they have yet to agree terms for connection.

If you wish to view or download information from Part 2 of this statement then you will need to apply for full access. [Apply For Access to Full Statement](#)

The overall historic and future peak demand on the Distribution System is provided in Part 2 of this statement, it shows the winter peak and summer minimum daily demand curves for WPD and the annual load duration curve.

Information on the commercial terms for connecting to and using our network are contained in our Condition 5 Statements. These statements also give information on competition in connections. Technical requirements are detailed in our Distribution Code. Details of how to obtain these documents and useful contacts are shown in [attachment 1.2](#).

### **3.0 Contact details for further information**

Please make requests for the full statement to:

Tony Berndes  
Primary System Design Manager  
Western Power Distribution  
Avonbank  
Feeder Road  
Bristol  
BS2 OTB

0117 933 2101

[tberndes@westernpower.co.uk](mailto:tberndes@westernpower.co.uk)

All other enquiries related to new connections or existing connections should be addressed to:

Western Power Distribution  
Records Team  
Toll End Road  
Tipton  
DY4 0HH

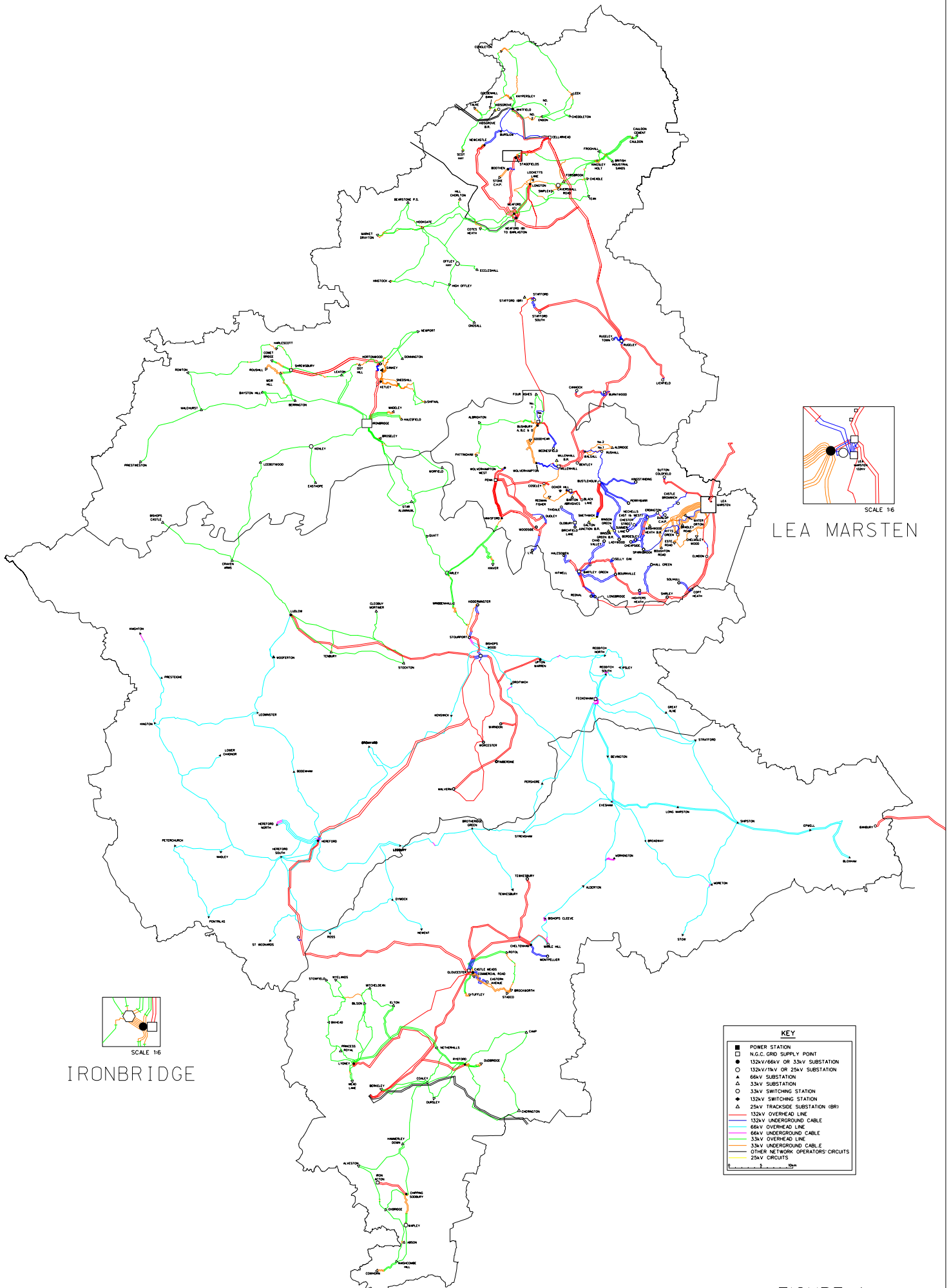
Telephone: 0845 072 7270

Fax 0115 876 7458

[New Connections Webpage](#)

New Guaranteed Standards of Performance for connections work began operation on 1<sup>st</sup> October 2010. These are set out in the Electricity (Standards of Performance) Regulations 2010 and the Electricity (Connection Standards of Performance) Regulations 2010. More information is also available from the [WPD \(West Midlands\) website](#)

The Energy Networks Association also provide several Distributed Generation Connection Guides these are available from the [ENA Website](#)



LEA MARSTEN

IRONBRIDGE

FIGURE 1

|          |           |                                |  |  |  |  |  |   |          |
|----------|-----------|--------------------------------|--|--|--|--|--|---|----------|
| SCALE    | 1:100,000 | INTRODUCTION                   |  |  |  |  |  | Produced by<br>Parway CAD                           |          |
| DATE     | 06.05.02  | SMALL SCALE GEOGRAPHIC DIAGRAM |  |  |  |  |  | ISSUE   | DATE     |
| DRAWN    | ADD       |                                |  |  |  |  |  | B   | 13.10.09 |
| CHECKED  | -         |                                |  |  |  |  |  | Amendments  |          |
| APPROVED | -         |                                |  |  |  |  |  | A   | 05.10.09 |
|          |           |                                |  |  |  |  |  | 132kV Overhead Cable changed to Under ground Cable. |          |
|          |           |                                |  |  |  |  |  | CUE   | CUE      |
|          |           |                                |  |  |  |  |  | MAPS-040-061  |          |

## Attachment 1.1 – Standard Network Information Price List

### 1. Geographic & Schematic Maps

| <u>Description</u>  | <u>Price</u>   |
|---|----------------|
| 1:2500 and 1:500 scale mapping in response to specific detailed requests.   | Free of charge |
| Overview Map with 400kv , 132kv, 275kv, and 33kv network.   | Free of charge |
| Information Map (A3) with distribution areas and local contacts   | Free of Charge |
| Small scale geographic plan for location of circuit only. Usually consisting of one or more on a A1 or similar size sheet | £50.00         |
| Large scale geographic plans showing individual conductor sizes along the circuit. (Usual scale size 1:1250 on A1 sheets) | £35.00         |
| Set of 132kv schematic diagrams   | £50.00         |
| Set of 33kv schematic diagrams  | £80.00         |
| Complete set of 11kv Schematic Diagrams   | £60.00         |
| Individual distribution areas at  | £20.00         |

### 2. Network Data

|  | <u>PRICE</u> |
|--|--------------|
| a) Fault Outage Data - 132kV, 66kV or 33kV Circuit                               | £30 per cct  |
| b) Circuit Impedance & Rating -<br>11kV Circuits (per circuit)                   | £20 per cct  |
| c) 11kV Feeder Load Data (up to 5 circuits)<br>typical winter max and summer min | £30          |
| d) Protection Settings (up to 10 circuit breakers)                               | £30          |

### 3. Plant Data

### PRICE

- a) Circuit Breaker Rating (up to 10 circuit breakers)  
continuous and fault £30
- b) 132kV, 66kV or 33kV Transformer (up to 3 transformers)  
rating, impedance, tap range and tap step £20

### 4. Feasibility Studies – Illustrative Costs

Prior to making a formal Application for a Connection Offer you may request we undertake a Feasibility Study to establish the viability of making a connection to our Distribution System. We will carry out preliminary network analysis and provide an indicative connection assessment which will include the results of the network analysis and an outline of the engineering scheme to allow the connection. We will require payment in advance of the study being made and will notify you of the relevant study charges prior to commencing work.

Our charges associated with the provision of Feasibility Studies involving design in advance of a formal Connection Application are set out in the table below. Charges for any other activities, such as excavation works will be individually assessed and agreed with you before these are undertaken. The Minimum Charge will always apply. Additional charges will only be applicable where the Applicant amends their connection requirement which necessitates us to carry out further analysis or assessment:-

| Category- Demand                                    | Minimum Charge £ | Additional Charge per hour £ |
|---|------------------|------------------------------|
| Connection greater than 250kVA and up to 1MVA at LV | 365              | 57                           |
| Connection greater than 250kVA and up to 1MVA at HV | 365              | 57                           |
| Connection greater than 1MVA and up to 3MVA at HV   | 464              | 62                           |
| Connection greater than 3MVA and up to 10MVA at HV  | 1159             | 72                           |
| Connection greater than 3MVA and up to 10MVA at EHV | 1739             | 72                           |
| Connection greater than 10MVA and up to 50MVA       | 1739             | 72                           |
| Connection greater than 50MVA                       | 2318             | 72                           |

| Category- Generation                               | Minimum Charge £ | Additional Charge per hour £ |
|--|------------------|------------------------------|
| Connection of a Small Scale Embedded Generator     | 114              | 57                           |
| Connection of other generation at LV               | 373              | 62                           |
| Connection of generation at HV up to 1MVA          | 1449             | 72                           |
| Connection of generation at HV greater than 1MVA   | 2028             | 72                           |
| Connection of generation at EHV up to 10MVA        | 3187             | 72                           |
| Connection of generation at EHV greater than 10MVA | 3187             | 72                           |
| Connection of generation greater than 50MVA        | 3767             | 72                           |

Note:

“LV”, “HV”, or “EHV” in the table above denotes the highest voltage of assets installed including any associated Reinforcement or diversionary works.

Small Scale Embedded Generation (SSEG) is defined as a source of electrical energy rated up to and including 16 Amperes per phase, single or multi-phase, LV and designed to operate in parallel with our Distribution System

These charges are based on WPD’s direct labour and overhead rates at the time of print. Charges are subject to change. The above Feasibility Study charges are exclusive of VAT which should be added at the prevailing rate.

**Terms**

The charge for carrying out a Feasibility Study will normally be provided within 10 working days. Following payment and provision of appropriate data, studies will typically require 2 – 10 weeks depending on the complexity of the study work required.

High volume requests may take longer to process, and would be priced individually based on the time taken to compile the requested information, but would not exceed the rates above.

In the event that enquiries need information from original equipment suppliers e.g. to seek enhanced ratings, reverse power flows etc. WPD will use its best endeavours to obtain this, but cannot be held responsible for non-provision or delayed provision of information from such 3<sup>rd</sup> parties. Where such 3<sup>rd</sup> parties require payment for information, the costs of obtaining it will be advised.

Although all reasonable efforts will be made to ensure the accuracy of data provided, WPD shall have no liability in contract, tort or otherwise to the enquirer or any other person for any loss or damage resulting from any delay in providing the data or any reliance placed upon it whether or not WPD is proved to have acted negligently.

We reserve the right to exclude information that may be considered confidential to an individual customer.

Cheques should be made payable to Western Power Distribution (South Wales) plc.

**\*\* All prices above will be subject to VAT at the prevailing rate \*\***

## **Attachment 1.2 Useful documents and contacts:**

### Distribution Code

This sets out all the material technical aspects related to connections to and operation of the distribution system. Copies are available from either Ofgem's or WPD's website [www.ofgem.gov.uk](http://www.ofgem.gov.uk) or [www.westernpower.co.uk](http://www.westernpower.co.uk) . For queries related to the distribution code contact,

Nigel Turvey  
Design & Development Manager  
Western Power Distribution  
Avonbank  
Feeder Road  
Bristol  
BS2 OTB

0117 933 2435  
[nturvey@westernpower.co.uk](mailto:nturvey@westernpower.co.uk)

### Condition 5 Statements

Three statements are produced and updated annually in accordance with Condition 5 of our Licence that cover the following areas:

- i) Charges for the use of the network including a schedule of adjustment factors to be made in respect of distribution losses. This statement also gives a list of demand-constrained zones where restrictions may be applied to the use of certain timeswitch regimes for off peak loads.
- ii) Charges for the connection of new load or generation to the distribution network
- iii) Charges for distribution Metering and Data Services. These include meter provision and meter operation.

Copies of the statements are available from our website [www.westernpower.co.uk](http://www.westernpower.co.uk)  
For queries related to these documents please contact,

Nigel Turvey  
Design & Development Manager  
Western Power Distribution  
Avonbank  
Feeder Road  
Bristol  
BS2 OTB

0117 933 2435  
[nturvey@westernpower.co.uk](mailto:nturvey@westernpower.co.uk)

## Radio Teleswitch Agreement

A number of off peak domestic supplies are controlled via a radio teleswitch which can vary the time an off peak regime is available. Users who would like to sponsor a particular regime need to become party to the Radio Teleswitch Agreement. For further information please contact;

Nigel Turvey  
Design & Development Manager  
Western Power Distribution  
Avonbank  
Feeder Road  
Bristol  
BS2 OTB

0117 933 2435  
[nturvey@westernpower.co.uk](mailto:nturvey@westernpower.co.uk)

## Use of System Agreement

Before an Authorised Electricity Operator can use the network to supply connected customers, they need to enter into a Use of System Agreement. Copies of our Use of System Agreement are available from;

Tim Hughes  
Western Power Distribution  
Avonbank  
Feeder Road  
Bristol  
BS2 OTB

0117 933 2148  
[thughes@westernpower.co.uk](mailto:thughes@westernpower.co.uk)

## Specifications

Users who require more information on the specifications used for equipment forming part of the distribution network should contact;

Paul Jewell  
Policy Manager  
Western Power Distribution  
Avonbank  
Feeder Road  
Bristol  
BS2 OTB

0117 933 2413  
[pjewell@westernpower.co.uk](mailto:pjewell@westernpower.co.uk)

## National Engineering Recommendations

A number of National Engineering Recommendations (including P2/6 – Security of Supply) are referenced in the Distribution Code. These are available from;

Energy Networks Association  
18 Stanhope Place  
Marble Arch  
London  
W2 2HH  
Tel: 020 77065100

## Network Data as listed in Attachment 1.1

Requests for the more detailed network data listed in attachment 1.1 or queries relating to this statement should be addressed to: -

Tony Berndes  
Primary System Design Manager  
Western Power Distribution  
Avonbank  
Feeder Road  
Bristol  
BS2 OTB

0117 933 2101

[tberndes@westernpower.co.uk](mailto:tberndes@westernpower.co.uk)

## Contact details for other interconnecting networks

Contact details for adjoining network operators can be obtained from the Ofgem website at [www.ofgem.gov.uk](http://www.ofgem.gov.uk)