

**Long Term Development Statement for
Western Power Distribution (South
Wales) plc's
Electricity Distribution System
April 2010**

(PART ONE ONLY)

Western Power Distribution (South Wales) plc
Registered in Wales No.2366985
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 (South Wales) 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.

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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 (South Wales) plc (here after referred to as ‘WPD’) is responsible for just over 1 million customers in a 11,800 sq km service area in South and West Wales. Western Power Distribution (South West) plc delivers electricity to 1.4 million customers over a 14,400 sq km service area in South West England.

The company employs over 2,370 staff of which 1,485 are based in the South West with the remaining 885 located in Wales.

As a distribution business we own the distribution system assets including 84,000km of network and 90,000 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. WPD provides the electrical network to distribute electricity to these customers.

This statement covers the network in south and West Wales.

The area we cover for electricity distribution extends from Pembrokeshire in the West to Monmouth in the East and from the South coast of Wales up to the towns of Aberaeron and Rhayader in mid-Wales. The area is largely rural but includes the cities and towns of Cardiff, Swansea, Newport, Abergavenny, Brecon, Carmarthen and Pembroke as well as many other coastal resorts.

There is a wide spread of industrial and commercial activities within the area, with a significant amount of “new” industry replacing the more traditional coal mining and steel making industries. Tourism and farming are also important to the local communities, more so in mid and west Wales. Business activity is generally concentrated along the M4 corridor and the South Wales valleys. In contrast to the major cities and towns, we are also responsible for some of the most sparsely populated areas in the UK including the Brecon and Pembrokeshire National Parks.

Engineering depots are located in Haverfordwest, Llanfihangel-Ar-Arth, Swansea, Bridgend, Church Village, Cardiff, Cwmbran, and Brecon.

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PART 1 Summary/Introduction

This statement is in two parts. This first part provides an overview of the distribution network in South Wales 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](#).

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 including the National Grid Transmission System 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
- Equivalent NGT source network
- 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 shown in [attachment 3](#). [Attachment 4](#) 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 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

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

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

Western Power Distribution
Records Team
Ffynnon Menter
Phoenix Way
Swansea Enterprise Park
Llansamlet
Swansea
SA7 9HW

Telephone: 0845 601 3341

Attachment 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 33kvnetwork.	Free of charge
Information Map (A3) with distribution areas and local contacts	Free of Charge
Complete set of Distribution Maps 1:50,000 scale, A3 with OS background. or	£480.00
Individual distribution areas at	£35.00
Set of 132kv schematic diagrams	£50.00
Set of 33kv schematic diagrams	£80.00
Complete set of 11kv Schematic Diagrams (10 Distribution Areas) or	£150.00
Individual distribution areas at	£20.00

2. Network Data

PRICE

a) Fault Outage Data - 132kV, 66kV or 33kV Circuit	£30 per cct
b) Circuit Impedance & Rating - 11kV Circuits (per circuit)	£20 per cct
c) 11kV Feeder Load Data (up to 5 circuits) 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
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- b) 132kV, 66kV or 33kV Transformer (up to 3 transformers) £20
rating, impedance, tap range and tap step

4. Feasibility Studies – Illustrative Costs

<u>Connection Size</u>	<u>Illustrative Costs</u>
Feasibility study charges up to and including 1 MVA	No advance Payment – Day Rate £590
Feasibility Study charges > 1 MVA up to and including 3 MVA	£590 - £2360
Feasibility Study charges > 3 MVA up to and including 10 MVA	£2360 - £2950
Feasibility Study charges > 10 MVA up to including 50 MVA	£2950 - £4130
Feasibility Study charges > 50 MVA	Price on application

These charges are indicative only and are based on WPD's direct labour and overhead rates at the time of print. Charges are subject to change.

The above System Study charges are exclusive of VAT which should be added at the prevailing rate. System Study Charges are payable in advance of the study being undertaken.

Terms

Requests will normally be returned in 10 working days.

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 3rd parties. Where such 3rd 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.

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

Attachment 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 or 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

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
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

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

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

Specifications

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

Philip West
Policy Manager
Western Power Distribution
Avonbank
Feeder Road
Bristol
BS2 OTB

0117 933 2413
pwest@westernpower.co.uk

National Engineering Recommendations

A number of National Engineering Recommendations (including P2/5 – 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

Requests for the more detailed network data listed in attachment 1 should be addressed to: -

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

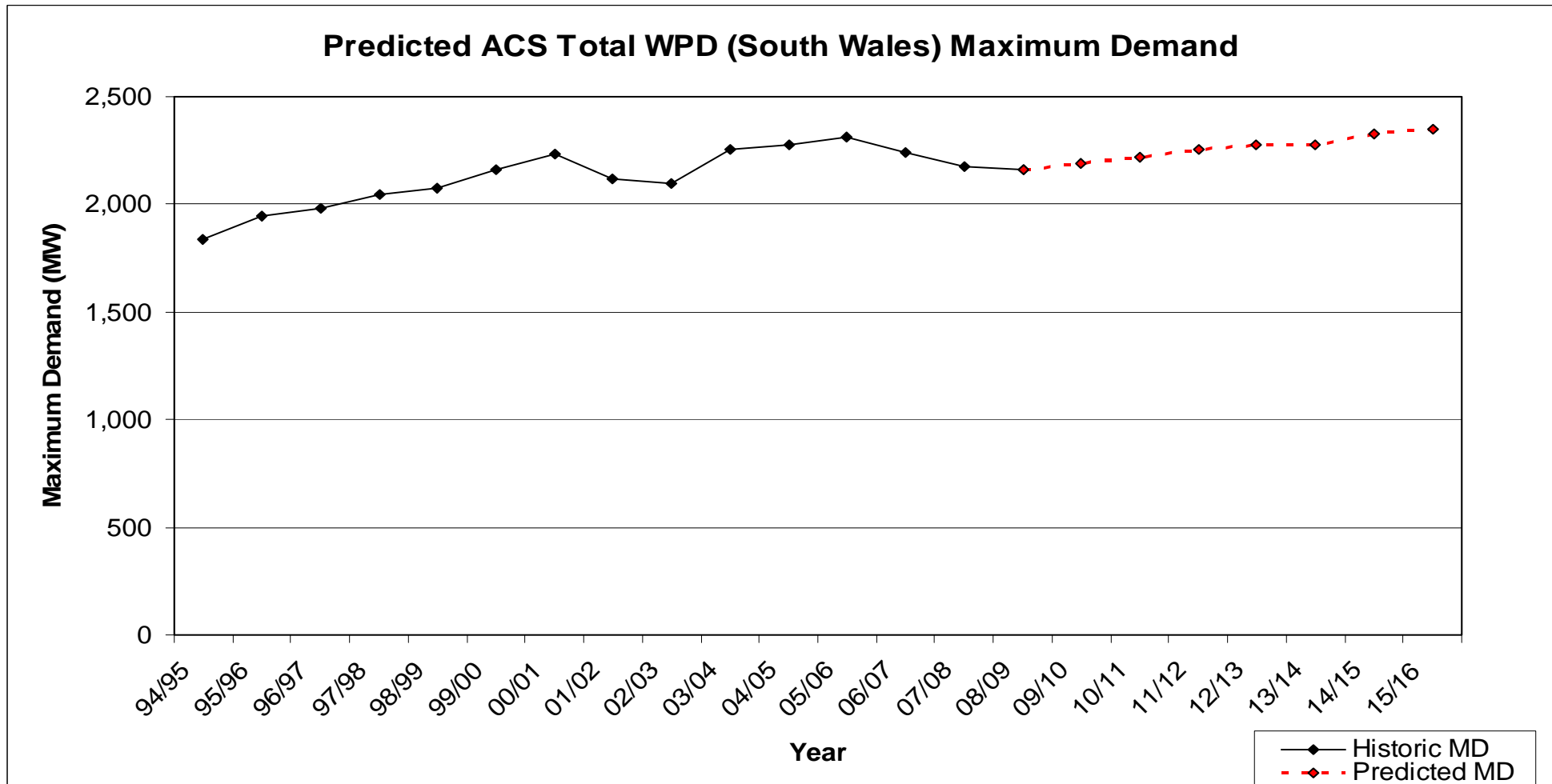
0117 933 2101
tberndes@westernpower.co.uk

Contact details for other interconnecting networks

National Grid UK
NGT House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

Central Networks
Herald Way
Pegasus Business Park
East Midlands Airport
Castle Donington
DE74 2TU

Scottish Power Manweb
Manweb House
Chester Business Park
Wrexham Road
Chester
CH4 R9F



Index of Load Curves 2009

Predicted Day of Maximum/Minimum Load Curve

Area Load Duration Curve

Typical Load Curve - Rural 132/33 kV Substation

Typical Load Curve – Mixed Rural/Urban 132/33 kV Substation

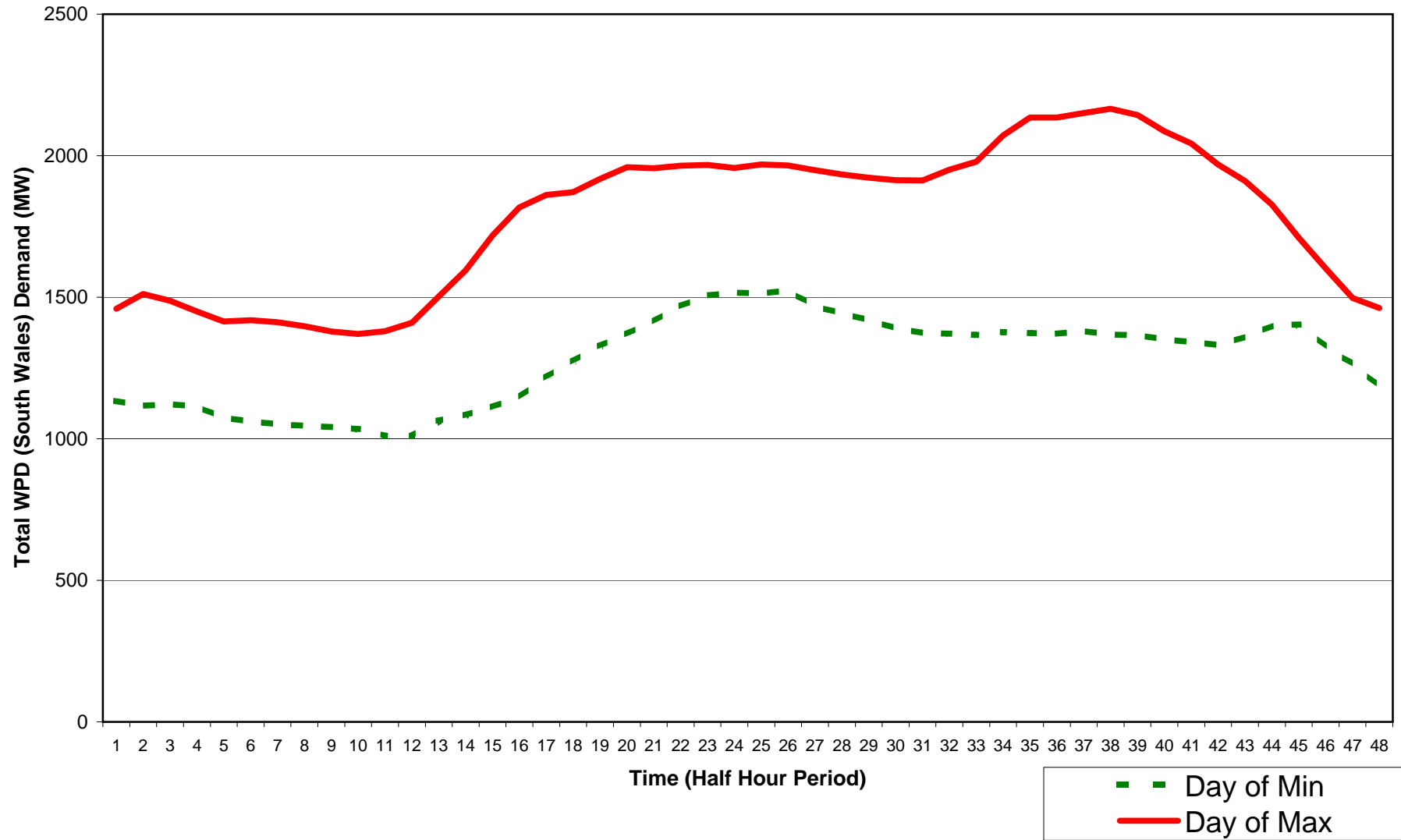
Typical Load Curve – Urban 132/33 kV Substation

Typical Load Curve - Rural 33/11 kV Substation

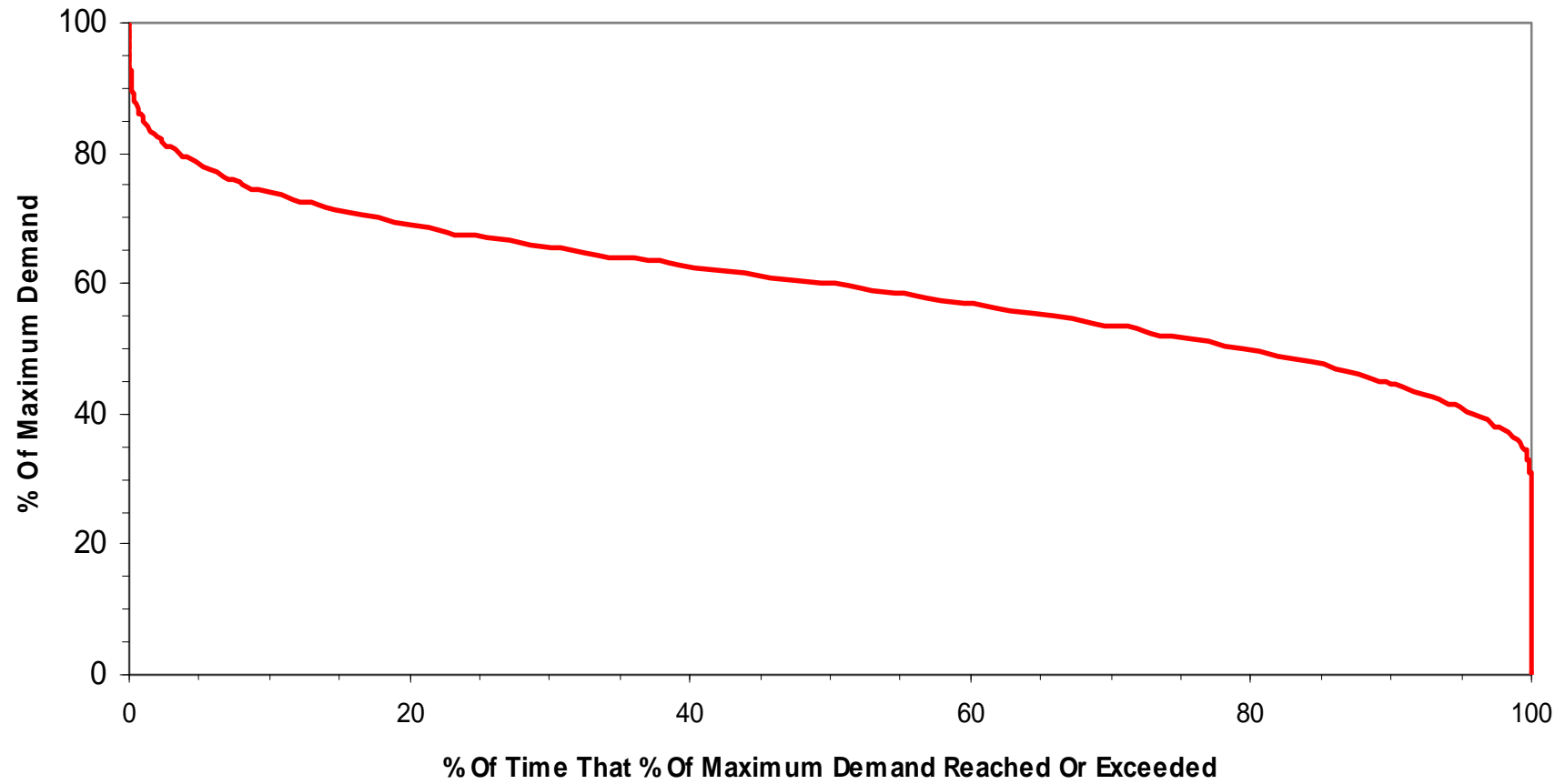
Typical Load Curve – Mixed Rural/Urban 33/11 kV Substation

Typical Load Curve – Urban 33/11 kV Substation

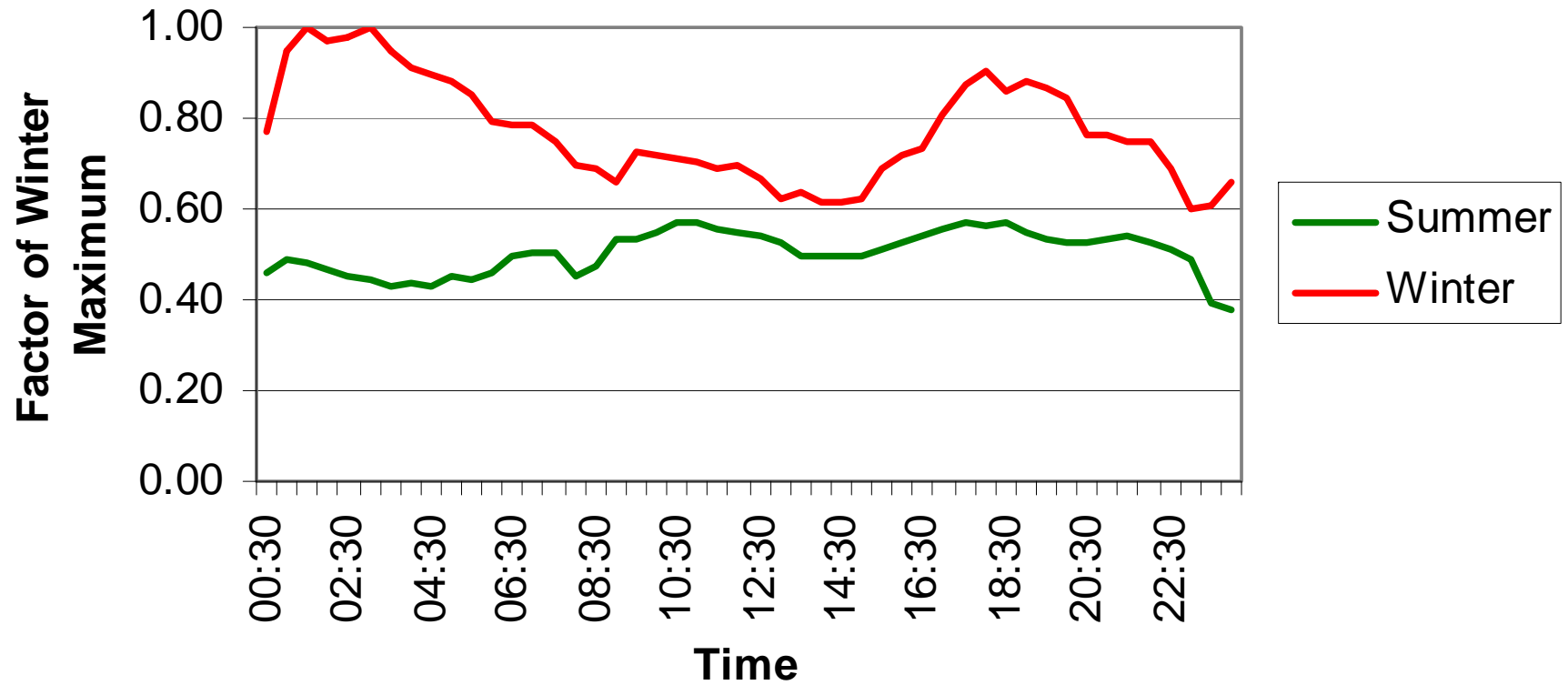
Predicted Maximum/Minimum Daily Load Curve 2009/10



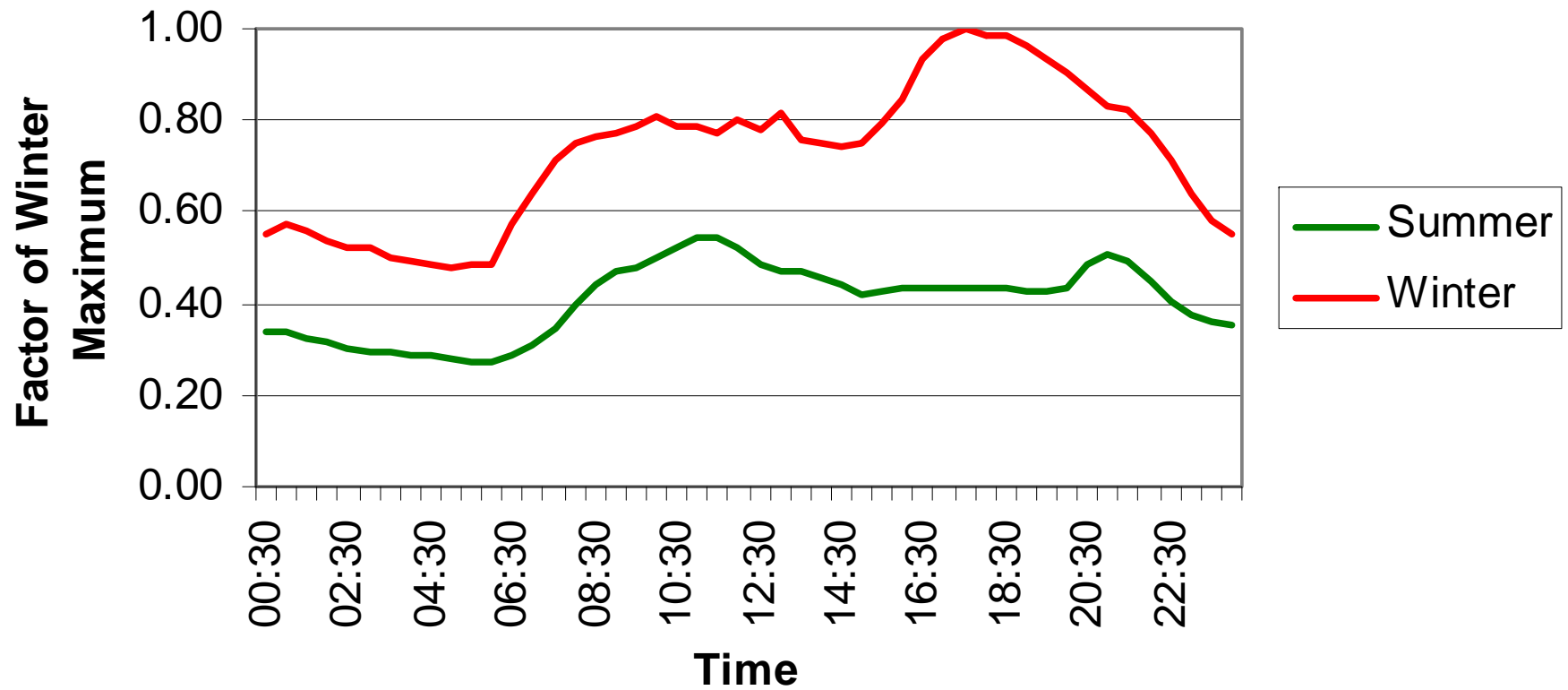
Load Duration Curve



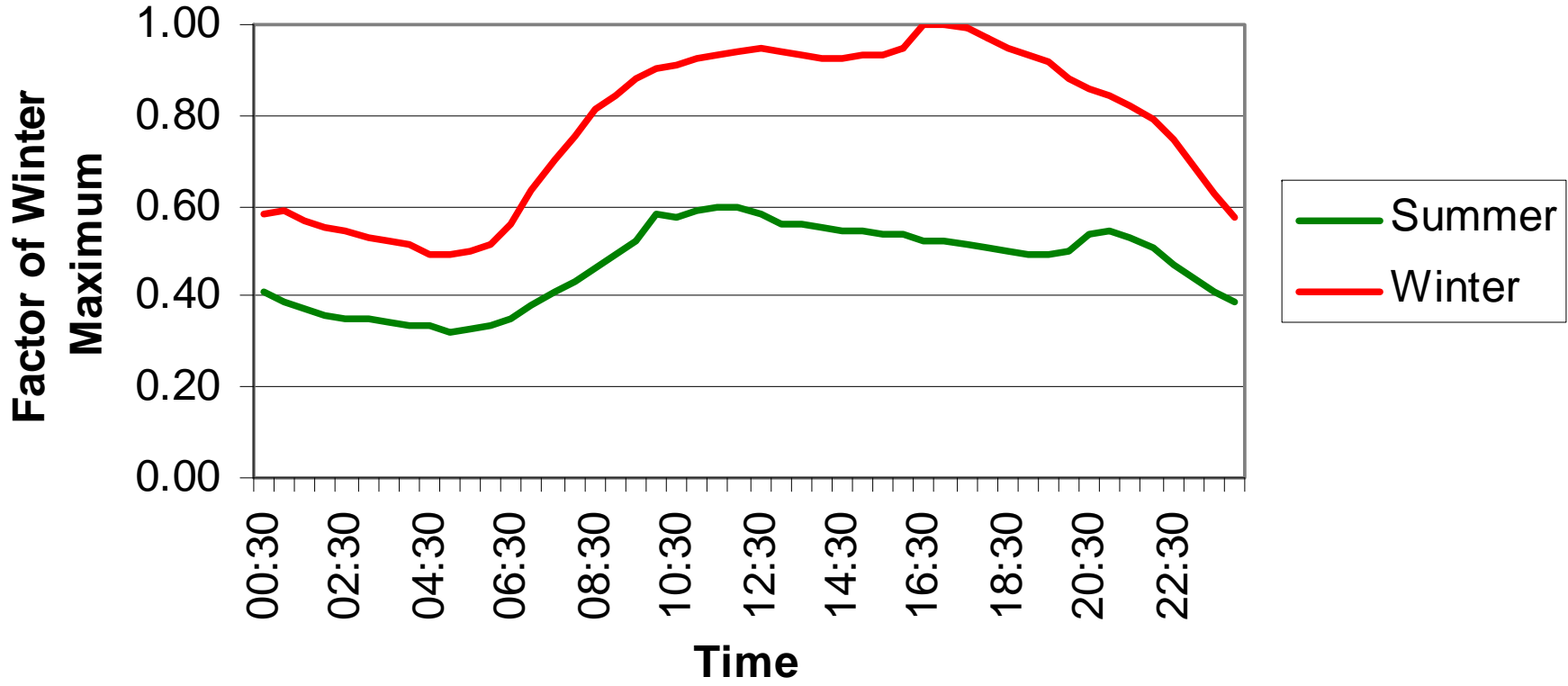
Rural 132/33 Kv Substation Typical Load Curve



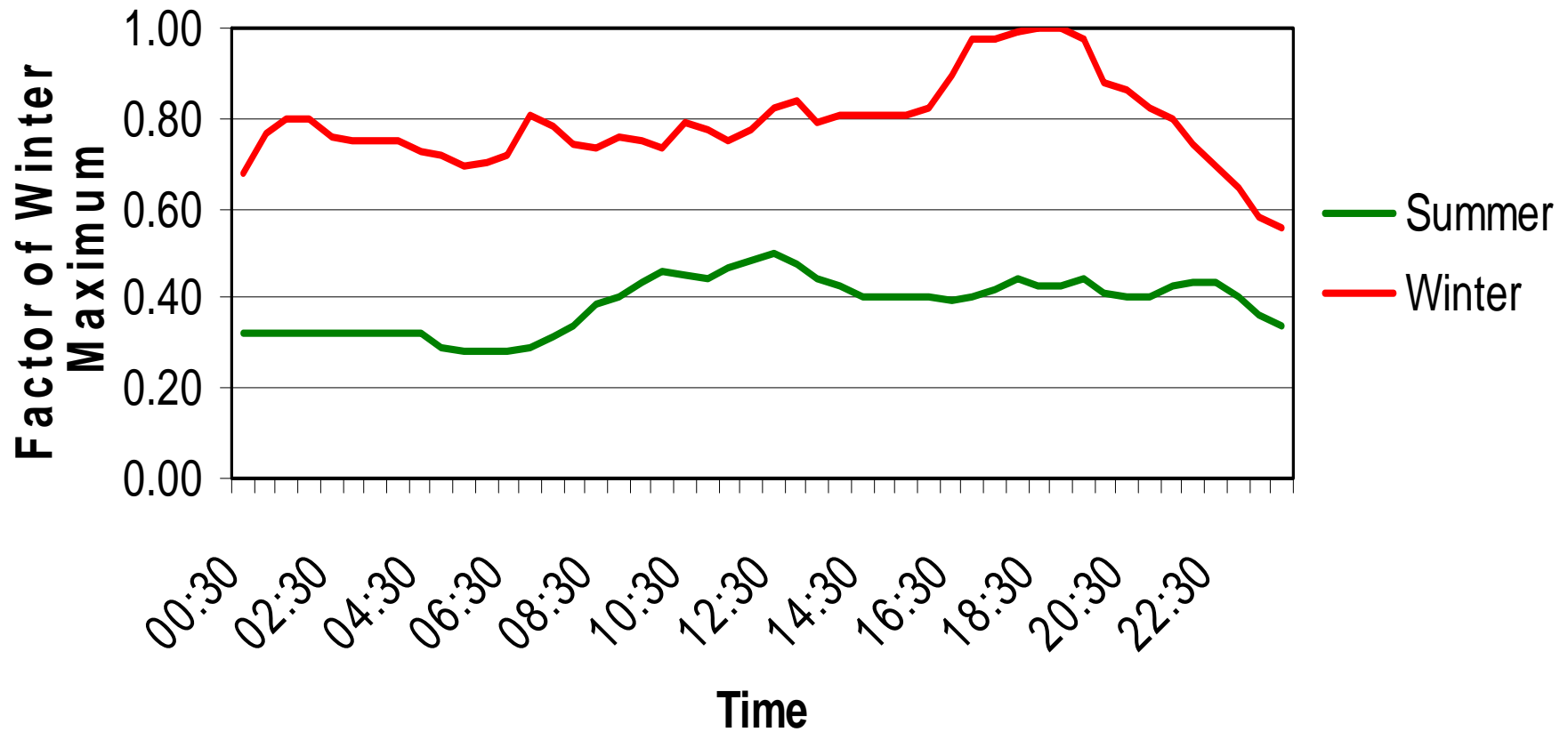
Mixed 132/33 kV Substation Typical Load Curve



Urban 132/33 kV
Typical Load Curve

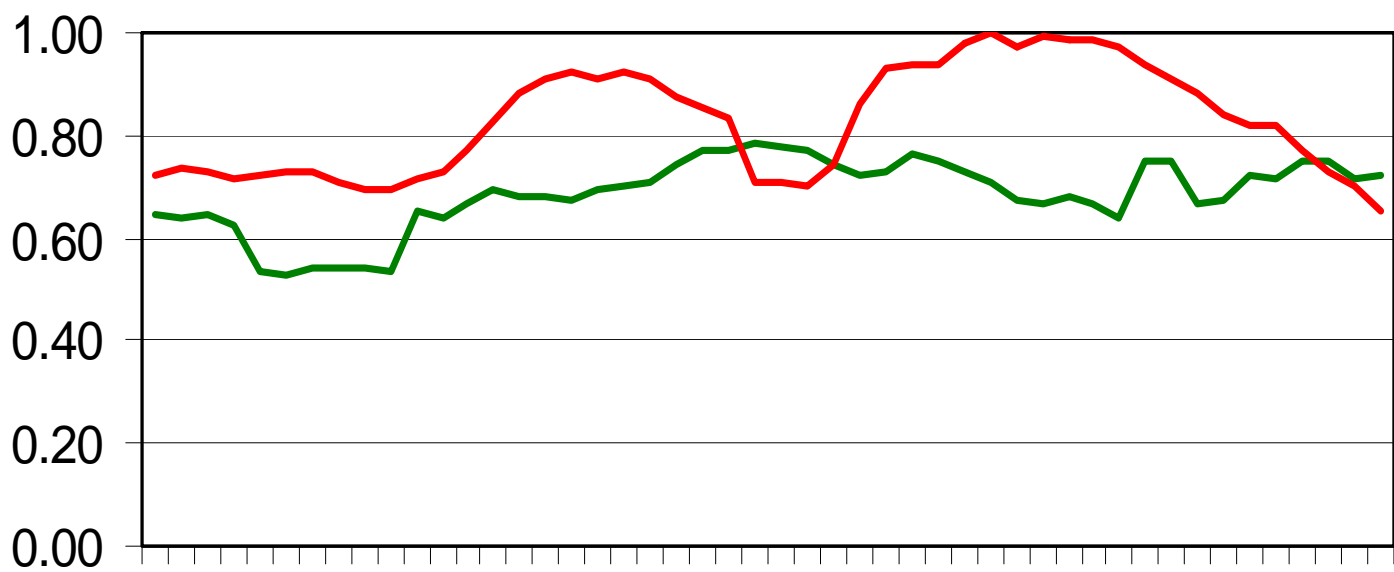


Rural 11 kV Primary Typical Load Profile



Mixed 11kV Primary
Typical Load Profile

Factor of Winter Maximum



— Summer
— Winter

Urban 11kV Primary
Typical Load Curve

