

**WESTERN POWER DISTRIBUTION (SOUTH WEST) PLC**  
**WESTERN POWER DISTRIBUTION (SOUTH WALES) PLC**

**Modification Proposal**

**Amendment Proposal: WPD/WALES/WEST/UOS003**

**Title: Modification Request on changes to the Use of System Charging Methodology to incorporate IDNO Networks and consequential changes to the form of the Use of System Charging Statement**

**Date of Issue: 21/03/2007**

**FOR APPROVAL BY THE AUTHORITY**

This Modification Proposal sets out Western Power Distribution (South West) plc and Western Power Distribution (South Wales) plc ("WPD") proposals to amend WPD's Use of System Charging Methodologies and consequential changes to the form of the Use of System Charging Statements.

**Issue Record**

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## Western Power Distribution

### Modification Request on changes to the Use Of System Charging Methodology to incorporate IDNO Networks and consequential changes to the form of the Use of System Charging Statements

March 2007

#### **1. Introduction**

- 1.1 As of 1 April 2005, DNOs methodologies must conform to the objectives set out in Standard Licence Conditions 4(3) and 4B(3). These state that methodologies should:
- facilitate the discharge of the DNO's obligations under the Act and its licence; and
  - facilitate competition in supply and generation, and not restrict competition in transmission or distribution; and
  - be cost reflective, as far as is practicable once implementation costs are taken into account and
  - take into account developments in the licensee's distribution business.
- 1.2 WPD are obliged, under SLC4(2) of their distribution licence, to keep their use of system charging methodologies under review and make modifications as necessary for the purpose of better achieving the relevant licence objectives.
- 1.3 The purpose of this document is to propose changes to WPD's use of system charging methodologies, which will better reflect the costs associated with Independent Distribution Network Operators (IDNO's).
- 1.4 In conjunction with these changes to the methodology statements it is proposed to include a list of the yardstick customers used to determine all tariffs to improve transparency.
- 1.5 At this time it is also necessary for us to make a number of consequential changes to the form of our Use of System charging statements and the scope of these changes is also included in this request.

#### **2. Charging Arrangements**

##### **Existing arrangements**

- 2.1 Currently IDNO's are charged by taking their voltage of connection and an appropriate business tariff is applied on the basis of that voltage of connection. For example a small housing estate with no land being leased for the site of a substation and taking a low voltage supply, would be charged under the

large non domestic supplies LV network tariff applicable to profile 5 to 8; a business tariff.

- 2.2 WPD has been in discussion with IDNO's regarding the cost reflective nature of its existing use of system charging methodology statement for formulating boundary tariffs in respect of IDNO's. It is with this background that WPD has decided to propose this modification to its present methodology statement.
- 2.3 For clarification WPD believes that it is not part of WPD's licence obligations to implement tariffs that are specifically designed to ensure that IDNO's can make a margin. However, the proposed IDNO tariffs produce margins in the range of 7% to 46% over the existing economy 7 tariffs offered in both licence areas, dependent upon whether the connection is LV or HV. The differences between the existing and IDNO tariffs reflect the costs that WPD expect to avoid when customers are connected via an IDNO network. In the case of the LV tariff these costs are the service costs and a proportion of the LV network costs.

### **Problems with the Existing Arrangements**

- 2.4 There are two perceived problems with charging IDNO networks using existing tariffs. The first is that the load shapes of IDNO sites that supply domestic customers differ from the load shape used to determine the existing tariffs thus resulting in a charge that is not cost reflective.
- 2.5 The second problem is the application of capacity charges to predominantly domestic sites. The IDNO tariff is unlikely to include a capacity element so the IDNO and DNO tariff structures are different making it difficult for the IDNO to set an appropriate charge. Minimum capacity charges under the existing DNO tariffs also mean that the IDNO is at a disadvantage during the period where a site is being developed. Generally this is not a problem that will arise with commercial developments.

### **Proposed Arrangements**

- 2.6 The proposal is to formulate new yardstick customers for two IDNO tariffs which better reflect the basic characteristics of predominantly domestic embedded networks. One would be appropriate for LV connections the other for HV connections. Predominantly domestic is defined as more than 50% of the site's maximum demand is due to domestic connections.
- 2.7 Following approval of Modification request WPD/WALES/WEST 002a from 1 April 2007 charges to IDNO sites connected at EHV will be determined by the LRIC methodology. Charges to predominantly domestic sites covered by this modification request will be implemented as follows: If the authority decides not to veto this proposal before 30<sup>th</sup> April 2007 then it will be implemented on 1<sup>st</sup> August 2007 otherwise it is proposed that implementation will take place on the 1<sup>st</sup> day of the month 4 months after a decision not to veto is made.
- 2.8 We do not have load research data for IDNO networks and we do not believe that such data exists on a weather corrected basis to match the data used for

tariff setting purposes. Our low voltage network design program DEBUT (Demand Estimation by Units and Time) which uses profiled data to size equipment, has been used to obtain the load shape for domestic estates typical of those that IDNO's will operate.

- 2.9 An assumption, based on current practice, of what is a typical number of houses in an LV development and HV development is used. In the example prices attached, a typical LV development is assumed to have 50 dwellings and an HV 300 dwellings. These assumptions are consistent with evidence that has been presented to us about housing developments in the WPD distribution area.
- 2.10 Using the assumption from 2.6 above and an assumption regarding the proportion of developments which are off peak in nature (currently 10% are assumed to be), yardstick characteristics such as units/kW and coincidences can be determined from the load shapes.
- 2.11 These are then plugged into the yardsticks and a further assumption is made regarding the LV system yardstick costs for the IDNO LV tariff, in that as the IDNO is likely to take ownership of a significant proportion of the LV network assets, 50% of the cost of the LV system is not attributed to the IDNO. This is different from the HV connection in that it is assumed that a feed out of our HV system is assumed to be the method by which an IDNO connects at that voltage level.
- 2.12 After revenue reconciliation to the total target income, the next stage is to determine the tariff structure and since this is for predominantly domestic connections that are unrestricted or off peak, the structure consists of a day and night charge only. The night period is defined as a seven hour period starting at 23.30 hours clocktime in WPD (South West) and a seven hour period starting at 0030 hours clocktime in WPD (South Wales) distribution area..
- 2.13 Where the IDNO connection is predominantly non domestic in nature the appropriate tariff will be the existing non domestic tariff.
- 2.14 It is proposed that the following amendment to the use of system charging methodology statement be made;

*The following Yardstick customers are used to determine tariffs as these represent the major types of customer;*

*Domestic supplies profile class 1 and 2*

*Small Non domestic supplies profile class 3 and 4*

*Large non domestic supplies profile classes 5 to 8 HV supplies*

*Large non domestic supplies profile classes 5 to 8 LV substation supplies (not in South Wales)*

*Large non domestic supplies profile classes 5 to 8 LV network supplies*

*Large non domestic supplies half hourly metered HV supplies*

*Large non domestic supplies half hourly metered LV substation supplies (not in South Wales)*

*Large non domestic supplies half hourly metered LV network supplies*

*Unmetered supplies non half hourly metered*

*Unmetered supplies half hourly metered*

*Site specific charges*

*Licensed distributor tariff – predominantly domestic LV connected*

*Licensed distributor tariff - predominantly domestic HV connected*

- 2.15 At present there are no unlicensed distributors in WPD's distribution area supplying predominantly domestic loads. However, where appropriate, WPD will make the new Licenced Distributor tariffs available to unlicensed operators.
- 2.15 In terms of metering WPD reserves the right to install its own metering in order to facilitate billing, assist with data verification, further aid the tariff formulation process and for system design purposes.

### 3. Impact on Prices

3.1 The table below shows the proposed prices under the new Licenced Distributor tariffs.

<b>Unit Charge:</b>	p/kWh HV SUPPLIES		p/kWh LV SUPPLIES
<b>WPD South West</b> For each night unit supplied.	0.29p		0.49p
For each unit supplied at other times.	1.29p		2.19p

<b>Unit Charge:</b>	p/kWh HV SUPPLIES		p/kWh LV SUPPLIES
<b>WPD South Wales</b> For each night unit supplied.	0.20p		0.35p
For each unit supplied at other times.	1.35p		2.34p

3.2 The table below shows a comparison of the proposed new tariff rates with the equivalent domestic rates charged in the host distribution network area.

	WPD Tariff Rate	Proposed Licenced Distributor Rate	
	p/kWh	p/kWh	
<b>WPD (South West)</b>			
<b>LV connected</b>			
Economy 7 Night	0.54	0.49	91%
Economy 7 Day	2.40	2.19	91%
<b>HV connected</b>			
Economy 7 Night	0.54	0.29	54%
Economy 7 Day	2.40	1.29	54%
<b>WPD (South Wales)</b>			
<b>LV connected</b>			
Economy 7 Night	0.38	0.35	92%
Economy 7 Day	2.51	2.34	93%
<b>HV connected</b>			
Economy 7 Night	0.38	0.20	53%
Economy 7 Day	2.51	1.35	54%

3.3 The table below shows a comparison of the proposed new tariff rates with the equivalent domestic rates charged in the host distribution network area assuming 15.7% of domestic unrestricted units are used at night.

	WPD Tariff Rate	Proposed Licenced Distributor Rate (15.7% night units assumed)	
	p/kWh	p/kWh	
<b>WPD (South West)</b>			
<b>LV Connected</b>			
Domestic Unrestricted	2.10	1.92	91%
<b>HV connected</b>			
Domestic unrestricted	2.10	1.13	54%
<b>WPD (South Wales)</b>			
<b>LV Connected</b>			
Domestic Unrestricted	2.17	2.02	93%
<b>HV connected</b>			
Domestic unrestricted	2.17	1.17	54%

#### 4 Boundary Metering Arrangements

4.1 In their July 2005 decision document on the Regulation of Independent Electricity Distribution Network Operators, Ofgem stated that it is necessary to identify a suitable mechanism that ensures flows at the boundary can be measured or estimated accurately. In addition, they stated that proportionate mechanisms should be used and that the cost of any such mechanism should be borne by the IDNO. The decision document gave the main arguments against boundary metering to be:

- If the DNO had extended the network there would be no metering and charges would be based largely on profiled metering
- Additional enclosure to accommodate metering
- Exposure of IDNO's to profile errors when the same profiles are used across all networks

4.2 Following this decision document Ofgem held a joint IDNO/DNO workshop on boundary issues on 28<sup>th</sup> September 2005. The notes of that workshop state that there was general agreement that metering may be necessary at HV and for bulk LV but a proxy for a metered system could be acceptable at LV. An IDNO took an action at this workshop to develop (with input from other IDNO's) a matrix setting out the proposed boundary metering. We are not aware of this action being completed.

- 4.3 Each licence holder decides on the design criteria they employ. Our low voltage design programme, DEBUT, takes into account the value of losses and hence sizes equipment to provide an economic design. This can result in larger transformers and cable sizes being used than necessary for purely thermal capacity reasons as a value is placed on losses. The economic driver to do this is the loss incentive and the sliding scale capex incentive introduced at the last price control. IDNO's are not subject to these incentives and hence any penalty or benefit resulting from a different level of losses would be passed on to WPD if the IDNO used a different design standard and boundary metering was not used.
- 4.4 The concerns over accommodation do not apply to HV connections as there will already be a need for accommodation for the HV point of isolation. Given this, the long term benefits of accurately knowing system flows and the concern over the differing incentive on losses between IDNO's and DNO's which become more significant as the size of the IDNO network increase, WPD believes that a proportionate response is that metering is required for HV connections. At LV we are prepared to accept aggregated profiled data, adjusted for losses to the connection point, derived from settlements for each connection point to our network as an alternative to metering if the IDNO can provide it. Aggregation of data to site level is need to allow us to calculate each site's demand so that we can assess local network loading and economically develop the network. We would need suitable assurance of the audit processes being in place to ensure that this estimate was accurate. We believe that it would be beneficial for Ofgem to develop a losses mechanism for IDNO's so that they are incentivised/required to consider the cost of losses in their design criteria.
- 4.5 The proposed changes to our Use of System Charging statement reflect our stance on boundary metering.

The conditions applied to boundary metering are:

- i. Licenced Distributors connecting at low voltage may provide aggregated profiled data, adjusted for losses to the connection point, derived from settlements, for each connection to the WPD plc network as an alternative to metering.
- ii. For connections at HV, metering will be required.
- iii. Where metering is used, or aggregated data per site is provided, it will be at the connected Licenced distributors' cost.
- iv. We reserve the right to install and own metering, at our cost, at the point of connection of any Licenced Distribution networks to enable data collection for tariff formulation, data verification and system design purposes.

## **5. Proposals versus licence obligations**

- 5.1 Predominately domestic IDNO networks have a different load shape to non-domestic connections and hence applying non-domestic charges to these networks will not be cost reflective as they are likely to be more coincident with peak demand and to have a different load factor. This would be a particular issue on networks with substantial off peak demand. The introduction of an IDNO tariff

specifically designed for predominantly domestic load will be more cost reflective as it reflects the underlying characteristics of the load.

- 5.2 Withdrawal of standing charges for predominantly domestic networks puts IDNO's on a similar footing to WPD during the development phase of a connection and does not restrict competition in distribution.
- 5.3 The boundary metering proposals facilitate WPD's ability to develop an economic network by the provision of demand data for system design purposes. The proposals also facilitate competition by not burdening the connecting IDNO with metering requirements above the minimum levels needed to meet WPD's requirements.

## **6 Changes of form to the Use of System Charging Statements**

- 6.1 The following changes are proposed to the Statement of Charges for Use of Western Power Distribution plc's Electricity Distribution System. The same changes will be required for both the WPD (South West) and WPD (South Wales) statements:

Explanation of the metering requirements for Licenced Distributors connecting to the WPD system

Notes on charges for Licenced Distribution networks covering the application of tariffs for licenced and unlicenced operators.

- 6.2 Change marked versions of the proposed Use of System Charging Statements for WPD (South West) and WPD (South Wales) are included with this modification request.