# Central Networks West - Proposals Concerning Use of System Charging Methodology

December 2007

## INTRODUCTION

This submission is made in respect of Central Networks West. A separate but similar submission is also being made in respect of Central Networks East.

Proposals detailed in this submission result from a review of our charging methodology as required by our licence. The proposals represent significant improvements to our methodology in respect of charges to operators of embedded licensed distribution networks. In particular, we address concerns around capacity charges and reactive power charges in relation to embedded networks by proposing the option of simple 'unit only' tariff structures. We believe implementation of these proposals will better achieve the relevant objectives set out in our licence.

These proposals have several significant plus-points:

- Simple change
- Gives embedded operators choice
- Addresses issue with tariff structures
- Generally improves embedded operators' margins
- No change to underlying methodology
- Principles easily transferable to 'G3' methodology in future
- Requires only a simple boundary meter (or 'virtual' meter)

Whilst our proposed tariffs do not match the structure our domestic tariffs, which comprise both fixed and variable rates, they do provide choice and are a simple and transparent proxy for embedded networks of all sizes.

It is our aim (subject to approval) to implement the proposals with effect from 1 April 2008, or as soon as possible thereafter.

## Proposals

We have developed a new charging methodology in respect of use of system by operators of embedded licensed distribution networks. The methodology is based on our current approved costing model and provides an additional option for charging, based on simple, unit rate only, tariff structures.

It is our intention to use the new methodology to produce prices that will come into effect from 1 April 2008. This timetable would require us to make an indicative announcement in late December 2007. Ideally we would like to have the Authority's approval of these proposals prior to this date, but recognise the likelihood that we will have to make the indicative prices conditional upon such approval. Despite the issue around indicative tariffs, we consider it appropriate to target early implementation.

The remainder of this section is arranged in the following way:

1.1 Detailed description of our proposals;
1.2 How the proposals better meet licence conditions;
1.3 Consultation carried out;
1.4 Illustrative charges;
1.5 Proposed wording of Methodology Statement; and
1.6 Our future plans.

### 1.1 Detailed description of the proposals

We propose to provide additional tariffs that will be available, as an option, only to operators of embedded licensed distribution networks. These tariffs will be in addition to our normal range of non-domestic tariffs, which will remain available to all.

The additional tariffs will be based on the following existing tariffs which are those most commonly used in connection with embedded licensed distribution networks:

- Small Non-domestic Two Rate (LLFC 010);
- Medium Non Domestic LV Two Rate (LLFC 021);
- LV Half Hourly (LLFC 127), and;
- HV Half Hourly (LLFC 365).

The additional tariffs will have exactly the same cost base as the relevant base tariffs, but will be expressed as simple (day / night) unit rates, rather than the more complex structures of the base tariffs.

The absence of capacity charges will be a significant benefit to network operators, especially in the early stages of their networks' development, but does give rise to potential issues around reservation of network capacity. We propose to treat embedded networks in the same way as we treat additions to our own network - reviewing the need for capacity two or three years after connection, taking a view on the likely need for any unused capacity in conjunction with the operator and freeing any 'spare' capacity for general use.

## 1.2 How the proposals better meet licence conditions

Operators of embedded licensed distribution networks have expressed concern that aspects of our current tariffs represent barriers to competition. In particular, the use of more complex tariff structures - often including capacity charges and excess reactive power charges - cannot always be reflected to end users by the operators of embedded networks. Presenting these alternative tariffs in the form of simple unit rates overcomes issues with capacity charges and reactive power charges and gives the operators of embedded networks greater certainty about margins available to them. The proposals therefore better meet our licence requirement to not restrict, distort, or prevent competition in the distribution of electricity.

## 1.3 Consultation carried out

The proposals were presented to the Distribution Charging Methodology Forum by Andrew Neves on the 22nd November and discussed with the industry parties. We have not consulted formally on our proposals.

## 1.4 Illustrative charges

The illustrative charges detailed in table 1 below have been calculated based on Central Networks' current DUoS tariffs.

The table compares Central Networks West's existing 2007/08 tariffs ("Base Price") to equivalent 2007/08 tariffs derived using the proposed pricing model ("Alternative Price"). It is important to stress that both the 'base price' and 'alternative price' versions of the tariffs would be available as options to all operators of embedded licensed distribution networks.

These are NOT indicative 2008/09 prices.

**Table 1: Illustrative charges**

| Name | Charge | Units | Base Price | Alternative Price |
|---|---|---|---|---|
| **SND 2 Rate** | Standing charge | p/cust/day | 18.10 | 0.00 |
| | Unit charge - day | p/kWh | 1.01 | 1.42 |
| | Unit charge - night | p/kWh | 0.20 | 0.28 |
| | | | | |
| **MND LV** | Standing charge | p/cust/day | 127.00 | 0.00 |
| | Unit charge - day | p/kWh | 0.95 | 1.47 |
| | Unit charge -night | p/kWh | 0.20 | 0.31 |
| | | | | |
| **LND LV** | Standing charge | p/cust/day | 141.00 | 0.00 |
| | Availability charge | p/kVA/day | 5.57 | 0.00 |
| | Excess capacity charge | p/kVA/day | 5.57 | 0.00 |
| | Excess reactive power charge | p/kVArh | 0.20 | 0.00 |
| | Unit charge - day | p/kWh | 0.23 | 1.39 |
| | Unit charge - night | p/kWh | 0.10 | 0.60 |
| | | | | |
| **LND HV** | Standing charge | p/cust/day | 375.00 | 0.00 |
| | Availability charge | p/kVA/day | 4.25 | 0.00 |
| | Excess capacity charge | p/kVA/day | 4.25 | 0.00 |
| | Excess reactive power charge | p/kVArh | 0.12 | 0.00 |
| | Unit charge -day | p/kWh | 0.12 | 0.77 |
| | Unit charge - night | p/kWh | 0.06 | 0.38 |

## Effect of illustrative charges on embedded distribution network operators' bills

Central Networks West currently bills a total of seven embedded networks, belonging to just three licensed distributors. It would be inappropriate to provide the detailed breakdown by tariff of the effects on operators' bills, as this could reveal sensitive information about embedded networks to rival operators[1]. However, it is possible to highlight the effects that this proposal would have in the following way:

Based on the 6 months to September 2007[2]:

| | |
|---|---|
| Total number of embedded HV and LV networks billed: | 7 |
| Total amount of DUoS billed for these networks[3]: | £219,298 |
| | |
| No. of networks that would be better off on alternative tariffs: | 5 |
| Total amount of DUoS billed for these networks: | £211,367 |
| Total DUoS that would have been under alternative tariffs: | £182,416 |
| Saving over 6 months to September 2007 for these: | £28,951 |
| | |
| No. of sites that would not be better off on alternative tariffs: | 2 |
| Total amount of DUoS billed for these networks: | £11,802 |

With regard to the five sites that would be significantly better off under the alternative tariffs, the main reason for four of these sites is that they are currently being charged for their requested reserved capacity but have not yet matured enough to utilise this reserved capacity fully. The sites are therefore particularly affected by capacity charges under the standard tariffs. The other site does not have capacity charges but nonetheless has a low load factor and is therefore particularly affected by the fixed charge under the standard tariffs. It is not unexpected that

[1] A detailed breakdown will be provided to the Authority on a confidential basis, if requested.
[2] Amounts shown refer to a six month period. As these networks are still growing, it is inappropriate to extrapolate to a full year.
[3] This income is dominated by one particularly large embedded network

embedded sites would have low load factors and under utilised connections in these early stages of their development, and this is consistent with Central Networks' own experience with 'all the way' connection of developments of a similar type. It is common for the development of sites - especially housing developments - to be spread over extended periods and for the available network capacity to be well in excess of the recorded maximum demand for a number of years. It is important to note that this is different to the position with connections to individual domestic or non domestic properties, which tend to rise to maximum capacity quite quickly after connection. This difference is sufficient to justify treating embedded networks in the way proposed.

With regard to the two sites that would not be better off under the alternative tariffs, both appear to have higher than average load factors. We would therefore anticipate that the operators would not wish to move to the alternative tariffs, but retain the current ones (which they are entitled to do under this proposal). The demand at these two sites is such that if they were supplying domestic properties we estimate that their operators would be making significant margins under the current standard tariffs (approximately 25% and 50% for the two sites).

It should also be noted that all 3 licensed distributors that have been billed in CN West's area would benefit through lower overall DUoS charges under the proposed method.

The analysis above takes into account 'real world' data for relatively immature networks. Another view of the impact of the alternative tariffs can be gained by considering 'idealised' scenarios of mature networks. The following scenarios consider a series of embedded networks of varying size, all serving different numbers of exclusively domestic properties with the identical characteristics. The available margins are indicated based on the current tariffs / unit only version of current tariff and the potential future 'G3' tariffs / unit only versions of

the G3 tariffs. In preparing this comparison the following assumptions are made[4]:

- Annual volume 4233 units per house (17% night)
- After diversity maximum demand 1.4kW per house
- Authorised capacity closely matches maximum demand
- Power factor 0.95
- Losses 1% for LV connected network, 3% for HV

| Scenario | Current Tariff | Current (unit only rate) | G3 tariffs | G3 (unit only rate) |
|---|---|---|---|---|
| **1 House** | -71% | **14%** | -56% | **27%** |
| **5 Houses** | **17%** | 14% | **31%** | 27% |
| **25 Houses** | **34%** | 14% | **49%** | 27% |
| **75 Houses** | **32%** | 10% | **36%** | 16% |
| **150 Houses** | **28%** | 12% | **39%** | 35% |
| **750 Houses** | 48% | **50%** | 64% | **64%** |
| **3000 Houses** | **53%** | 50% | **65%** | 64% |

## 1.5 Proposed wording of methodology statement

### Use of System Charging Methodology – Regulated Demand Tariffs

Additional heading and paragraph to be inserted between paragraph 53 and 54 (Paragraph 54 and all subsequent paragraphs will be re-numbered and the heading "Tariffs for Embedded Licensed Distribution Networks" will appear in the Contents table):

[4] This analysis differs slightly from that presented at the recent DCMF meeting due to more accurate assumptions on volumes. Percentages in bold in the table represent the best available option for different scenarios

***Tariffs for Embedded Licensed Distribution Networks***

*54 In addition to the standard tariffs, alternative tariffs are available to the operators of embedded licensed distribution networks on an optional basis. These tariffs are based on the following four non-domestic tariffs; Small Non Domestic Two Rate, Medium Non Domestic LV, Large Non Domestic LV and Large Non Domestic HV. The tariffs share the same cost base and forecast assumptions as the base tariffs, and are set by calculating the total annual yield of each base tariff (excluding any excess reactive power charges) and dividing this by the relevant unit volumes to give an equivalent 'unit only' version of the tariff, expressed in pence per kWh (day and night).*

## 1.6 Our future plans

We plan to use the proposed methodology (if approved) to set charges for 2008/09. Indicative charges will be announced in late December 2007 and we will also announce the proposed new tariffs at that time, conditional on receipt of Authority approval.

In respect of longer term arrangements, we are actively working with Scottish Power Energy Networks and Scottish and Southern Energy Power Distribution, under the 'G3' banner. The G3 companies plan to make proposals for wide ranging changes to our use of system methodology early in the new year. It is our intention to use the methodology set out in this proposal in conjunction with the new G3 methodology at that time.

In the longer term we will continue to review and improve our methodology and this may include further development of charges for operators of embedded licensed distribution networks.