Central Networks West - Proposals concerning use of system charging methodology

July 2009

Reference 01/2009 West

Introduction

This submission is made in respect of Central Networks West. It relates to use of system charges for operators of embedded licensed distribution networks. A separate but similar submission is also being made in respect of Central Networks East.

Proposals detailed in this submission are the result of work by specialist consultants Reckon, presented to the DNOs and Ofgem and refined by Central Networks.

The proposals represent a simple interim measure to ease potential issues with LV connected embedded networks. The proposed tariffs are designed to work with data that is currently available, either to us or to the embedded operator.

Central Network's range of standard tariffs will remain available to embedded operators, alongside the new tariffs. Standard tariffs will be the default, on a network by network basis, where the embedded operator has not requested the new tariffs

The new tariffs apply to embedded networks and are designed to work as a portfolio, so that networks serving mixed domestic / non-domestic and single rate / two rate customers can be accommodated. We do not have information about customers on embedded networks, so it will be for the embedded operators to confirm the mix of customer types served by their networks, along with consumption details. This information will be used to split units recorded on the boundary meter between the various portfolio tariffs.

Our proposals will enable a competitor embedded within our network to obtain a reasonable margin provided that its costs are consistent with our costs. We have focussed on LV connected networks, in line with IDNOs perceptions about the main current problem area, and have approached this by attempting to split our business into separate notional 'upstream' (EHV and HV) and 'downstream' (LV) businesses, in line with IDNOs' stated preference. Having done this, we have derived an estimate of the typical proportion of the LV network which we provide when connecting embedded networks, compared this to what we typically provide when making 'all the way' connections, and use this ratio as a proxy for LV cost splitting. These proportions then form the basis for discounting our LV domestic and small non-domestic all the way tariffs, where 'final mile' distribution is provided by an embedded licensed distributor.

We believe the proposals are a pragmatic development of our methodology, which will have a positive impact on operators of embedded licensed distribution networks in the short term.

The joint DNOs are developing proposals for a common methodology for DUoS charges for the longer term, including charges for embedded networks, and plan to implement these in April 2010. Aspects of this proposal reflect current joint DNO thinking about CDCM charges for embedded networks. It is expected that this interim methodology will fall away in April 2010, when the CDCM is implemented.

We plan to implement the proposed methodology as soon as possible following a 'non veto' decision by the Authority. In view of the long build up to these proposals, which included many meetings with IDNOs and Ofgem, and which gave rise to the expectation that an interim methodology would be in place for 1 April 2009, we will apply the new methodology retrospectively for the period from 1 April 2009 where requested to do so by IDNOs. We do not believe the retrospective application of these tariffs will have a material impact, and will certainly not have any knock-on effect on other current tariffs.

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

1 Detailed description of our proposals;
2 How the proposals better meet licence conditions;
3 Consultation carried out;
4 Proposed wording of Methodology Statement;
5 Our future plans;
6 Resulting tariffs; and
7 Margin analysis.

1. Detailed description of the proposals

We have based our interim proposals on the 'net capital expenditure' approach discussed at the industry working group. We note that this approach has also been proposed by ENW, and is currently the subject of consultation by Ofgem.

Where we connect to an embedded distribution network operated by another licensed distribution system operator at low voltage, four new DUoS tariffs are to be made available.

The tariffs are discounted versions of our domestic and small non-domestic single rate and two rate tariffs. The discount reflects the fact that we typically do less at LV when we connect to an embedded network than would be the case if we provided all the way distribution. The new tariffs will only be available for embedded networks operated by licensed distributors and connected at LV.

The discount is based primarily on a notional split of our business into separate 'upstream' and 'downstream' businesses. This split is adjusted to take account of the typical proportion of the LV network which we provide when connecting embedded networks, compared to that which we typically provide when making all the way connections. The resulting adjusted split is used as the basis for discounting our all the way tariffs.

Rationale for our proposals

Rationale for the use of boundary tariffs

These proposals are formulated on the basis of boundary tariffs using existing data flows from boundary meters and counts of customers on each network provided by the embedded operators. These are simple interim proposals, and we anticipate their replacement with a common methodology, shared by all DNOs, from April 2010.

Rationale for a single discount percentage

We propose to apply the same discount percentage to each base tariff (domestic and small non-domestic single rate and two rate) and to all tariff components, on the grounds of simplicity, as these are interim tariffs.

Calculation of the discount percentage

We have calculated the discount percentage to be used in calculating the new embedded network tariffs using a three-step procedure.

The first step is to allocate our overall revenues from LV users between the different levels of our network, using a top-down allocation method based primarily on data from the regulatory reporting pack (RRP). This is described below.

The outputs from that first step are:

A percentage of total revenues attributed to LV service cables, denoted by the symbol [LV services %].

A percentage of total revenues attributed to the LV network, denoted [LV %].

The second step is to determine the proportion of our LV network that is typically used by an embedded network, relative to the amount of LV network used by a typical domestic customer.

This proportion is derived by dividing the average length of our LV mains serving IDNO connections, by the average length of our all the way mains.

The output from the second step is a single percentage, denoted [LV split %], representing the proportion of the LV network that, on average, LV-connected embedded networks use, relative to the average length of our all the way mains.

The third step is to combine the two percentages above in order to determine the discount to apply in the calculation of embedded network tariffs. The formula is:

[Discount %] = [LV services %] + (1 – [LV split %]) * [LV %]

The formula used to apply this discount to our existing LV domestic two-rate tariff is:

[Embedded network tariff component] = [Tariff component] * (1 – [Discount %])

Allocation of revenues to network levels

This describes the method that we have used to allocate our LV revenues to network level (step 1 of the calculation of the discount percentage).

Data sources

In order to allocate our LV revenues to network levels (step 1 of the calculation of the discount percentage), we have collected the following data from the most recent RRP submission (for the year 2007/2008):

Units distributed at each voltage level and total distribution losses.

Faults, inspection, maintenance and tree cutting expenditure, coded by network level.

Transmission exit charges.

Total distribution operating and faults expenditure excluding network rates.

Asset replacement capital expenditure, coded by network level.

General reinforcement capital expenditure, coded by network level.

We have also calculated our average income per unit distributed (p/kWh) from users supplied at LV.

Allocation of source data to an expenditure matrix

We have allocated total distribution operating and faults expenditure excluding network rates to network levels in the same proportions as faults, inspection, maintenance and tree cutting expenditure.

For general reinforcement expenditure and some elements of non-load related expenditure, RRP data do not distinguish between substation and network levels. In these cases, we have allocated expenditure between these levels in the same proportion as the asset replacement expenditure for which disaggregated data are available.

We have estimated the number of units flowing through each level of our network, using the data on units distributed at each voltage level and total distribution losses.

We have converted the expenditure coded or allocated to network levels from £ million to p/kWh, using the estimated number of units flowing through each level of our network. This gives us a matrix of p/kWh figures by network level and by expenditure category.

The network levels in the expenditure matrix are:

LV service cables

LV network

HV/LV substations

HV network

EHV/HV substations (excluding 132kV assets)

EHV network (excluding 132kV assets)

132kV/EHV substations

132kV network

GSP (transmission exit charges only)

This level of granularity is necessary to properly allocate costs to voltage levels.

The expenditure categories in the expenditure matrix are:

Operating and faults expenditure, including transmission exit charges, excluding network rates.

Asset replacement capital expenditure.

General reinforcement capital expenditure.

The relevant elements of the expenditure matrix are as follows:

Category	**LV service cable p/kWh**	**LV network p/kWh**	**HV/LV substations p/kWh**	**HV network p/kWh**	**EHV, 132kV and GSP levels p/kWh**
Operating and faults	0.083	0.218	0.100	0.124	0.096
Asset replacement	0.026	0.075	0.025	0.121	0.139
General reinforcement	0.000	0.005	0.003	0.016	0.039

This expenditure matrix is an intermediate step in arriving at a full split of costs by network level. It is used to allocate revenues by a single net capital expenditure method, as described below.

Total operating and faults expenditure (in p/kWh) is deducted from total LV revenues (in p/kWh). The result is an estimate of the amount of revenue attributable to assets (including both depreciation/replacement and return on capital), rather than to operations.

The asset replacement p/kWh and general reinforcement p/kWh are aggregated together for each network level. The result is an estimate of the amount of capital expenditure net of customer contributions at each network level, scaled to take account of units distributed at HV and EHV. This is because the amounts exclude customer-specific extension and reinforcement expenditure.

The estimated revenue attributable to assets is then allocated to network levels in the same proportions as estimated scaled net capital expenditure. This gives an allocation to network levels of revenue attributable to assets.

The revenue attributable to LV assets is aggregated with the LV operating and faults revenue to give an allocation to network levels of LV revenue. This allocation is then converted to percentages for each network level. The relevant percentages are as follows:

LV services	LV	LV/HV	HV	HV/EHV	EHV	EHV / 132kV	132kV	GSP
9.4%	26.0%	11.0%	25.4%	5.1%	3.6%	3.4%	13.8%	2.3%

Adjusting for LV network which we provide

This LV network percentage above (26.0%) is then adjusted to take account of the typical proportion of the LV network which we provide when connecting embedded networks, compared to that which we typically provide when making all the way connections. This is then combined with the (unadjusted) LV services percentage to give the overall discount. For Central Networks East the relevant percentage is 18.2%, so the overall discount to all the way tariffs is 30.6% [9.4+(26.0*(1-0.182))].

2. How the proposals better meet licence conditions

Operators of embedded licensed distribution networks have expressed concern that application of standard DUoS tariffs to embedded network boundary connections may lead to margin squeeze in certain circumstances. In part this can be caused by structural differences between the all the way tariffs (collected by the IDNOs) and the tariff charged at the boundary by the DNOs, and in part by the different pricing assumptions underlying these tariffs. These proposals effectively remove issues over structural differences by providing a range of boundary tariffs whose structures mirror those of the relevant 'customers' tariffs. Adopting the portfolio approach enables us to apply a mix of different domestic and non-domestic boundary tariffs, in order to obtain the best match to the all the way mix.

We currently charge embedded networks for use of our system on the basis of our tariffs for small, medium or large non-domestic users. We have identified some areas where this existing approach may be improved in respect of cost reflectivity and competition:

Cost reflectivity

Many embedded networks serve predominantly domestic customers, or a mix of domestic and small non-domestic customers, and have load characteristics that are different to those of medium or large non-domestic users. Our methodology for setting use of system charges uses an allocation of reinforcement costs which is

based on load characteristics (coincidence and load factors) of each customer type. Applying medium or large non-domestic user tariffs to LV embedded networks may not be appropriate.

The changes that we propose will help us better meet our licence objective "that compliance with the use of system charging methodology results in charges which reflect, as far as is reasonably practicable (taking account of implementation costs), the costs incurred by the licensee in its distribution business".

Competition

There is a risk that the current tariffs might not comply with the requirements of the Competition Act 1998 in some circumstances. Although we have no evidence of any infringement of these requirements, some embedded network operators have suggested the theoretical possibility of "margin squeeze" in relation to our existing charges. We wish to modify our methodology to ensure that competition is facilitated.

Transparency in this area will better demonstrate our compliance with the Competition Act 1998 and meet our licence objective "that compliance with the use of system charging methodology … does not restrict, distort, or prevent competition in the transmission or distribution of electricity".

The proposals effectively remove a potential barrier to competition in respect of LV connected embedded networks, and their implementation would, therefore, better meet the licence requirement not to restrict, distort, or prevent competition in the distribution of electricity.

3. Consultation carried out

We have not consulted formally on these proposals. We have discussed the issues around boundary tariffs with IDNOs in dedicated groups facilitated by Ofgem over the past several months.

These proposals are based on the IDNOs' suggestion that boundary tariffs should be based on splitting of DNO costs and income between the LV network and the higher voltage network. Our proposals are designed to enable a competitor embedded within our network to obtain a reasonable margin provided that its costs are consistent with our costs.

Legal concerns have prevented us from sharing with the IDNOs and other DNOs the results of applying this approach.

Our expectation is that Ofgem will consult on these proposals and this will provide an opportunity for IDNOs and other stakeholders to comment on both the details of the proposed methodology and its outcome in terms of prices.

4. Proposed wording of methodology statement

The following text will be inserted between paragraphs 56 and 57, and the contents page and paragraph numbering will be adjusted accordingly:

Tariffs for Embedded Networks

Where connection is made at LV to an embedded distribution network operated by another licensed distribution system operator, four additional tariffs are available on request.

The tariffs are versions of the domestic and small non-domestic unrestricted and two rate tariffs, discounted to reflect the fact that Central Networks is providing less than would be the case if it served the end users on an 'all the way' basis.

Embedded operators requesting these tariffs will be required to report, on a monthly basis, the mix of customer types served by their networks, along with consumption details. We require MPAN counts by customer type (domestic / non-domestic, single rate / two rate), together with splits of volumes between customer types by time band. This information is to be provided for each network, on a monthly basis. It will be used to allocate total units recorded at the boundary meter between the various tariffs.

Details of the way in which the information will be provided will be agreed between Central Networks and the down-stream operator.

Calculation of the discount percentage

We calculate the discount percentage to be used in calculating the new embedded network tariffs using a three-step procedure.

The first step is to allocate our overall revenues from LV users between the different levels of our network, using a top-down allocation method based primarily on data from the regulatory reporting pack (RRP). This is described below.

The outputs from that first step are:

> *A percentage of total revenues attributed to LV service cables, denoted by the symbol [LV services %].*
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> *A percentage of total revenues attributed to the LV network, denoted [LV %].*

The second step is to determine the proportion of our LV network that is typically used by an embedded network, relative to the amount of LV network used by a typical domestic customer.

This proportion is derived by dividing the average length of our LV mains serving IDNO connections, by the average length of our all the way mains.

The output from the second step is a single percentage, denoted [LV split %], representing the proportion of the LV network that, on average, LV-connected embedded networks use , relative to the average length of our all the way mains.

The third step is to combine the two percentages above in order to determine the discount to apply in the calculation of embedded network tariffs. The formula is:

*[Discount %] = [LV services %] + (1 – [LV split %]) * [LV %]*

The formula used to apply this discount to our existing LV domestic two-rate tariff is:

*[Embedded network tariff component] = [Tariff component] * (1 – [Discount %])*

In addition to the above, as a housekeeping matter, we are updating Central Networks' contact telephone number in paragraph 16. The new number is 02476 185769.

5. Our future plans

We plan to implement the proposed methodology as soon as possible following a 'non veto' decision by the Authority.

In respect of longer term arrangements, we are actively working with the IDNOs and other DNOs and expect to submit modification proposals by September 2009, for implementation in April 2010.

6. Resulting tariffs

The discount to our standard tariffs is 30.6%.

Based on our current domestic and small non-domestic single rate and two rate tariffs, the embedded network tariffs would therefore be:

Domestic Single Rate:

Standing charge	4.287 p/MPAN/day
Units	0.714 p/kWh

Domestic Two Rate:

Standing charge	5. 057 p/MPAN/day
Day units	0.825 p/kWh
Night units	0.153 p/kWh

Small Non-domestic Single Rate:

Standing charge	14.248 p/MPAN/day
Units	0.652p/kWh

Small Non-domestic Two Rate:

Standing charge	14.948 p/MPAN/day
Day units	0.735p/kWh
Night units	0.153 p/kWh

Application of the tariffs will require provision by the embedded network operator of downstream MPAN counts by customer type (domestic / non-domestic). Also, where networks serve a mix of single rate and two rate customers, splits of volumes between the two types will be required. This information is to be provided for each network, on a monthly basis.

Details of the way in which the information will be provided are to be agreed between Central Networks and the down-stream operator.

7. Margin analysis

The gross margin available to embedded operators results from the difference between the income received by them for 'all-the-way' use of system, and the charges paid by them to the upstream operator. We have analysed the margins available to embedded operators under a numbers of scenarios, using our current range of boundary tariffs, and compared these to those available using the proposed tariffs.

The results of this analysis are shown in the three sets of tables overleaf. The first set looks at networks serving different numbers of domestic customers (unrestricted, two rate and mixed), the second set looks at networks serving different numbers of non-domestic customers, and the third looks at networks serving equal numbers of domestic and non-domestic customers. As expected, the percentage margin remains stable at 30.2% of the all the way charges across all scenarios modelled.

Domestic only:

Domestic Unrestricted

No of Houses	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
24	1530	960	37%	1068	30.2%
25	1594	997	37%	1113	30.2%
50	3188	2288	28%	2226	30.2%
75	4782	3156	34%	3338	30.2%
76	4846	3190	34%	3383	30.2%
100	6376	3045	52%	4451	30.2%
150	9564	4259	55%	6677	30.2%
160	10201	4502	56%	7122	30.2%
200	12751	5474	57%	8902	30.2%

Domestic Two Rate

No of Houses	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
24	1814	1574	13%	1267	30.2%
25	1890	1616	14%	1319	30.2%
50	3779	3056	19%	2639	30.2%
75	5669	4275	25%	3958	30.2%
76	5745	4324	25%	4011	30.2%
100	7559	5495	27%	5277	30.2%
150	11338	7934	30%	7916	30.2%
160	12094	8422	30%	8443	30.2%
200	15117	10373	31%	10554	30.2%

50:50 Two Rate / Unrestricted

No of Houses	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
24	1672	1063	36%	1167	30.2%
25	1742	1104	37%	1216	30.2%
50	3484	2497	28%	2432	30.2%
75	5225	2938	44%	3648	30.2%
76	5295	2969	44%	3697	30.2%
100	6967	3711	47%	4864	30.2%
150	10451	5259	50%	7296	30.2%
160	11147	5568	50%	7783	30.2%
200	13934	6806	51%	9728	30.2%

Non Domestic Only:

Non-domestic Unrestricted

No of SND	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
1	200	202	-1%	140	30.2%
2	400	325	19%	279	30.2%
5	1000	695	31%	698	30.2%
10	2000	1311	34%	1396	30.2%
15	3000	2299	23%	2094	30.2%
25	5000	3084	38%	3490	30.2%
50	10001	5551	44%	6980	30.2%

Non-domestic Two Rate

No of SND	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
1	247	248	-1%	172	30.2%
2	494	418	15%	345	30.2%
5	1234	928	25%	862	30.2%
10	2468	2163	12%	1723	30.2%
15	3702	2547	31%	2585	30.2%
25	6169	3834	38%	4308	30.2%
50	12338	7052	43%	8617	30.2%

50:50 Two Rate / Unrestricted

No of SND	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
1	223	225	-1%	156	30.2%
2	447	371	17%	312	30.2%
5	1117	810	27%	780	30.2%
10	2234	1542	31%	1560	30.2%
15	3351	2632	21%	2340	30.2%
25	5585	3183	43%	3899	30.2%
50	11170	5748	49%	7799	30.2%

Mix Domestic and Non-Domestic:

Domestic & Non-domestic Unrestricted					
No of DOM/SND	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
24 & 2	1930	1206	38%	1347	30.2%
25 & 2	1994	1243	38%	1392	30.2%
50 & 4	3988	2754	31%	2784	30.2%
75 & 5	5782	2932	49%	4036	30.2%
76 & 5	5846	2956	49%	4081	30.2%
100 & 7	7776	3736	52%	5428	30.2%
150 & 11	11764	5345	55%	8212	30.2%
160 & 11	12401	5588	55%	8658	30.2%
200 & 14	15552	6855	56%	10857	30.2%

Domestic & Non-domestic Two Rate					
No of DOM/SND	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
24 & 2	2308	1896	18%	1611	30.2%
25 & 2	2383	1939	19%	1664	30.2%
50 & 4	4766	3571	25%	3328	30.2%
75 & 5	6903	4919	29%	4820	30.2%
76 & 5	6978	4968	29%	4872	30.2%
100 & 7	9286	6396	31%	6483	30.2%
150 & 11	14052	9350	33%	9811	30.2%
160 & 11	14808	9837	34%	10339	30.2%
200 & 14	18572	12175	34%	12967	30.2%

50:50 Domesic & Non Domestic Two Rate / Unrestricted					
No of DOM/SND	ATW Charges	Current Boundary Charges	Current Margin	Proposed Boundary Charges	New Margin
24 & 2	2119	1763	17%	1479	30.2%
25 & 2	2189	1801	18%	1528	30.2%
50 & 4	4377	2575	41%	3056	30.2%
75 & 5	6342	3451	46%	4428	30.2%
76 & 5	6412	3482	46%	4477	30.2%
100 & 7	8531	4430	48%	5956	30.2%
150 & 11	12908	6388	51%	9012	30.2%
160 & 11	13605	6697	51%	9498	30.2%
200 & 14	17062	8243	52%	11912	30.2%

Please note that percentages shown in the columns labelled "New Margin" in the above tables is slightly lower than the ATW tariff discount of 30.6%. This is due to the assumption in our calculations of one percent average network losses between the boundary and the end customers.