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Dear Lars

### **ELECTRICITY DISTRIBUTION LOSSES – A CONSULTATION DOCUMENT**

I write in response to your January consultation on distribution losses. My letter to Richard Ramsay dated 8<sup>th</sup> November 2002, set out our initial thoughts following a very useful workshop at Ofgem's offices on 29<sup>th</sup> October. It is helpful to see more detail of how your thinking has developed since that time.

We fully support the approach that you describe in para 1.18 of your paper. It is essential that the effects of all regulatory incentives are considered within a single framework. Reductions in the energy costs of transportation must be weighed against other potential cost impacts and the consequences for network performance.

We note the timetable set out in Chapter 2, which we hope will enable us to include within our business plan for the next price control review, investments and operating cost projections that reflect any changed approach to losses. We would also like to be involved in any working group you set up, and hope that the ideas set out below might help to guide the work of such a group.

I will now turn to the more detailed comments on chapters 4 and 5 of your document.

**a) Current level of losses and ability to control**

Before responding to the specific questions in para 4.39 it is worth making some general observations.

First, the expression 'losses' can be misleading, since most of the energy accounted for under this heading is consumed in the transportation process (much as pumping energy is part of the water transportation process). It is not mislaid or wasted (as with 'leakage' from pipe networks), although there may be scope for improved efficiency.

Second, ‘losses’ are calculated as the difference between two large numbers, one (energy entering DNO networks) is known with some certainty, while the other (deliveries to individual customers) is not. The reliability of any reported losses improves as the period over which the calculation is undertaken, is extended and as we move further forward from the period under review. Reconciliation of settlement data can extend across three financial years.

Third, it needs to be recognised that customers are often insulated from the signals a DNO may wish to send. Your paper rightly identifies the contribution to loss management that can arise from suitable charging mechanisms, such as time of day pricing, peak and reactive demand charging. These are all features of our DUoS charging structure, but we have no control over suppliers’ pricing policies which can dilute or distort these signals.

- (i) *Areas in which losses can be reduced* – The assessment of technical losses in 4.17 – 4.26 appears to be comprehensive; although in many cases it would be possible to extend the discussion under each heading to set out the cost and service implications of actions that would lead to a reduction in losses. Our previous letter highlighted some of the ways in which service could be affected. In the section on non-technical losses (4.27 – 4.35) we believe you could add a number of further items, such as :-

Registration errors, which typically lead to sales being understated  
Meter operator errors, such as incorrect CT ratios

However, it is also important to note that many forms of non-technical losses represent inadequacies in reporting. Reductions in these ‘errors’ will not necessarily reduce the total amounts of energy consumed or produced, and will not therefore have a direct effect on carbon emissions. Typically the effect will be a more appropriate attribution of costs that in itself, should lead to a more effective economic outcome.

- (ii) *Scope for further reducing losses* – We included within our letter of 8<sup>th</sup> November, an analysis of the scope for reducing losses. This was based on the technical opportunities, rather than any economic justification. It is clear that over time a significant reduction in losses could be achieved if neither cost nor network performance were seen as constraints. However we believe it is more appropriate to identify incentive mechanisms that would encourage DNOs to balance these parameters to secure a suitable outcome for customers.
- (iii) *Current Incentives* – We would agree that the current incentive is weak, and as we have previously indicated, does not encourage us to invest in low-loss equipment, even where there may be a long-term customer benefit from doing so. However care is needed before we conclude the incentive is **too** weak. It may just be poorly designed.

In our view there are a number of dimensions to any review of the existing incentive, which will include:

<i>Definition</i>	Is it appropriate to apply the same incentive to all components of losses, when it is evident that a DNO's ability to control them is not the same?
<i>Mechanics</i>	Is the calculation of targets and actuals suitable, eg what is included and what is excluded; time-periods used?
<i>Timescales</i>	What confidence can a DNO have of the enduring benefit when the mechanism is embedded in a price control of fixed (five year), and relatively short, duration?
<i>Value</i>	Should the scheme be priced on the basis of actual wholesale prices, an estimate of long-term prices, or including environmental costs not reflected in wholesale market prices?
<i>Linkages</i>	Does the value of current (or planned) incentives on capital investment and quality of supply influence or distort the value of a separate incentive for losses? How will the development of Distributed Generation affect losses? It is dangerous to assume that losses will be reduced, since many renewable generation projects are in remote locations away from centres of demand.

Your assessment in 5.8 of the share of benefits available to DNOs is probably over generous. Most distribution assets last for more than 40 years, the average cost of losses (from 5.6) is above 2.9p, and energy prices are likely to rise in real terms as we move away from carbon-based generation. Furthermore your calculation assumes there are no costs to achieve reduced losses. Where a DNO must spend to secure the benefits of the additional income stream, it is the net income that should be considered in deciding the appropriate sharing ratio. All of these points reinforce the view that the incentives are weak. However, they are applied to numbers over which the DNO has very limited short-term control.

- (iv) *Specific opportunities for customer benefit* – Our previous letter included some details of the opportunities for loss reduction. These were based on what might be technically practical. Without clarity of the reward mechanism it is difficult to identify which are commercially attractive. However we would be happy to discuss this with you further.

**b) Encouraging efforts to achieve an efficient level of losses**

As I have mentioned above, we cannot establish an efficient level of losses in isolation. Our duty is to provide an efficient co-ordinated and economical system of electricity distribution. Losses can therefore only be seen as a part of an integrated solution, which will match customers' expectations on cost and service quality.

- (i) *Valuation of losses* – We have sympathy with the view that losses should be valued to include the full societal costs, including an assessment of the environmental impact. We have not yet given detailed consideration to the calculation methodology in your Appendix 3. This seems premature before decisions are taken on the broad approach. However we would note that any

attribution of half-hourly prices to a profile of losses, must be subject to additional uncertainty arising from the sales profiling within settlement.

- (ii) Assessment criteria – Schemes should be assessed on their likely effectiveness, this will include their reliability of operation, absence of perverse incentives, fairness, simplicity and economy of operation.
- (iii) Input or output based schemes – In principle, we would prefer to face incentives that reward delivery of outcomes or outputs. However, this can only be appropriate where the outcome can be clearly demonstrated to fall within the control of the DNO. If this is not the case, it would be more appropriate to disaggregate performance to a level where the DNOs behaviour becomes the dominant driver. Given the lack of data it is difficult to see how actual losses can be segmented with any precision.

On the other hand, there are some DNO behaviours that can be linked to specific impact on losses. For example the purchase of low-loss transformers will reduce the level of losses for the whole period when such transformers are energised, compared to the purchase of a ‘standard-loss’ equivalent). This suggests a simple input based approach would be highly effective. This could take several forms, for example a guaranteed addition to the RAB for each such transformer installed or a higher return and/or shorter depreciation life for such assets.

- (iv) *Alternative Options* – The three options set out in 5.29 – 5.42 tackle a number of the issues raised earlier in this letter. We believe that Option 1 has the greatest merit, as it offers the greatest scope to respond to the inadequacies of the current approach.

We do not believe it would be appropriate for DNOs to purchase losses. The last 13 years have been spent in clarifying the distinctions between network operators and generators/suppliers. It would be a retrograde step to require DNOs to establish purchasing capabilities and it would also introduce unreasonable advantages for DNOs that were already affiliated to companies with such expertise. Such a move could not help to secure the long-term independence of network companies.

Option 2 implies that a target level of losses can be set. From the discussion both in your paper and in this letter there are good reasons to doubt that this can be done at present. A better understanding of what can be done, and what is economically justified would be needed. It is more consistent with Ofgem’s general approach to establish incentives that allow companies to define the optimal point from their own experience of costs and benefits. Hence we conclude that Option 1 offers the best prospect for an improved approach to incentivisation.

- (v) *Disaggregated approach* – The idea of more precisely targeted incentives is attractive. However its implementation depends upon the reliability of the data that could be used for reporting and operating any incentive mechanism. From this perspective we would prefer to start by trying to tackle the enormous

variations in losses arising from the mismatch in meter-reading intervals between GSP meters and customer meters. Any scheme which looks at losses over a fixed one year period is bound to suffer from ‘measurement error’. We recommend that a scheme designed around a minimum five year window for reporting losses should be developed. Such an approach would cover not only the 14 plus months of settlement reconciliation, but also the possibility of adjustments to reported sales that are an inevitable consequence of the prudence present within financial reporting.

A scheme that considered movements over longer periods would remove much of the uncertainty that causes DNO’s unease over any revaluation of losses. Once this had been overcome it would be more reasonable to develop incentives that reflected a much higher proportion of the total benefit to society of loss-reduction initiatives. At the same time it would be possible to establish more robust means of securing the impact on companies that were not subject to the same 5 yearly review as the rest of the price control.

## CONCLUSIONS

To summarise, we welcome Ofgem’s project to review incentives to reduce the energy costs of distributing electricity and hope to be able to participate in your working group.

We appreciate that the current incentive mechanism is not encouraging investments in low-loss equipment and feel that the most direct way to alter this would be to add an input-based reward for the installation of particular asset types. Beyond this we see scope for stabilising the basis of reporting on which any broader losses incentive should operate. By using five years, not one as the standard reporting period, the variations in non-technical losses should be largely suppressed. It would then be possible to refine the existing mechanism to more appropriately value losses and guarantee stability of rewards in the future.

I hope you find these observations helpful. I would be pleased to discuss our views at greater length.

Yours sincerely

**Mike Boxall**  
**Head of Electricity Regulation**