



United Utilities North West  
Dawson House  
Great Sankey  
Warrington WA5 3LW

Telephone 01925 237000  
www.unitedutilities.com

Mark Cox  
Distribution Policy  
Office of Gas and Electricity Markets  
9 Millbank  
London  
SW1P 3GE

Direct Line 01925 237096  
Mike.Boxall@uuplc.co.uk

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Dear Mark

### **Structure of Electricity Distribution Charges**

### **Consultation on the Longer Term Charging Framework**

I am pleased to have the opportunity to contribute further to your consultation on the structure of distribution charges. We see this project as very important to our commercial future and we intend to commit continuing resources to this area of work. Whilst we agree that the time is right to review DNOs' approaches to charging, we are concerned that the process you propose is not appropriate. We doubt that implementation can be left to DNOs unless there has been more extensive debate on the key issues and that such discussion takes place against a background of broader project objectives that have been debated with and agreed by Ofgem.

Before turning to the specific questions posed in your consultation, I would like to make some more general observations about the project. You have, rightly in our view, suggested that the development of any changed approach to Use of System pricing should be led by the DNOs, but with full engagement from suppliers. However, this work also needs to be informed by a clear indication of Ofgem's views in certain areas. Some of these have emerged from the discussions that you have encouraged, both at ISG and in the recent workshop at 9 Millbank. It will be very important for all parties to have a good understanding of Ofgem's expectations before too much effort is committed to any particular solution. It is worrying that you see the next step as the publication of principles to guide DNOs' implementation work. We believe that there is still so much to resolve that it is unrealistic to expect that a decision document can be produced without further dialogue.

I would particularly highlight the need for clarity of objectives, and the appropriate balance to take where these conflict. The workshop on 24 May identified the tension between pricing to secure economic efficiency in network development and the desire for cost reflectivity. This can be presented in terms of both the forward versus backward looking view of costs (and the implications for connection charging) and in the final price setting process (including both price structures and the 'scaling' to allowed revenues). We can also see an increasing interaction with wider public policy, in terms of both price levels impacting on the fuel poor and the growing focus on climate change initiatives and security of supply. These may add



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Warrington WA5 3LW

additional constraints to the development of a new approach to charging, and could be in conflict with the objectives set out in your consultation paper.

The workshop last month was also helpful in identifying the many components of the price setting process. Some of these may lend themselves more easily to collaborative action than others. It may be worthwhile to explore the prospects for a common framework for cost attribution to customer classes, but our own experience suggests that even here the major cost is in the gathering and manipulating of local data rather than the development of the generic tool. Individual companies may face different circumstances that would justify differing levels of detailed analysis. Local conditions, and commercial strategies, may also lead to different preferences on price structures. We are less willing to accept the adoption of complete standardisation in this area, especially since the current metering stock varies from region to region.

Nevertheless, we do support the basic tenet of your project, which is that the approach to DUoS pricing should be reviewed. We recognised the need to reconsider our own pricing modelling over a year ago, and therefore embarked on the project with University of Manchester described in your paper. This was intended to be a feasibility study to explore both the potential for a single approach to price modelling, covering both generation and demand, and the practicality of implementation. Whilst the work done to date has demonstrated the concept, we have not yet established the practicality of proceeding. We may be able to contribute some estimates of the additional costs of adopting the new approach to cost modelling, both for initial implementation and continued operation, but we also need some input on potential benefits that takes account of the likely response from other parties, especially generators and price sensitive demand. Ofgem is likely to be the best placed to undertake a comprehensive impact assessment, since you will be able to see the potential costs and benefits for all affected parties. In an earlier Structure of Charges consultation paper Ofgem indicated potential costs of £1m to £4m per DNO arising from this project. No allowance was given in the current price control for this expense, but we suspect the scope to reduce the cost through collaboration is very limited.

The apparent desire for a common approach to be adopted across all DNOs has discouraged us from proceeding too far on a unilateral basis, although we expect to be able to use the IFI mechanism to continue to support research work with the university. We would welcome an early discussion with you on this and other points raised in this letter and the more detailed response (in the attached paper) to the issues covered in your consultation paper.

Yours sincerely

**Mike Boxall**  
**Electricity Regulation Director**

## Appendix 1

### Chapter 3- Use of system charging models

#### *A framework for distribution network charging*

We welcome the approach adopted in this consultation of bringing together all of the related charging issues for consideration within a single review. This is a necessary step if we are to produce a better approach to charging in the future. However, it is disappointing that we cannot see more of Ofgem's current thinking in the document. It seems a giant leap to move from the current discussion document to a statement of Ofgem's principles in the summer, which is expected to form the basis of the DNOs work on a longer term charging framework. We would expect to see significant interaction between now and the publication of Ofgem's principles, and would have found it helpful to have an early indication of your current thinking.

#### *Charging principles*

The objectives set out in para 3.13 are all relevant, but may not be complete. It is necessary also to consider the impact of other public policy on the requirements for Distribution charging. We would expect any revised framework for Distribution charging to last for several price control periods (as you note, there have been few significant changes over the past 20 years). Over that period it is likely that government energy policy will increasingly focus on the challenges of climate change, security of supply and fuel poverty. These have implications for Distributors in terms of both their charge structures and their commercial approach, conditioned by a wider incentive regime. Ofgem's principles will need to recognise these challenges within a framework that still reflects (and provides an appropriate balance between) the statutory and licence obligations that have been identified.

The May 24 workshop helpfully clarified the various stages in the development of prices and the existence of at least two models which may need to be reviewed. The first provides a mechanism for attributing costs (particularly network assets) between different classes of customer, based on the connection voltage and the usage of the network. The second takes those cost attributions and converts them into prices consistent with the allowed revenues under the price controls. It is for debate how far either of these should be standardised in order to aid transparency. Our initial view would be that there are some underlying principles, which could be applied by all DNOs, but that there must still be scope to reflect local differences of circumstance.

It may therefore be helpful to agree the definition of incremental cost that should be used, but not to specify the level of disaggregation nor the customer classes to be separately specified. These may need to vary with local circumstance. It is less easy to see the scope for standardisation of tariff formulation given the differences that exist in metering standards between regions and the likelihood of varied commercial issues facing DNOs in specific locations. If Ofgem and/or suppliers see benefits in greater standardisation, the impact on future DNO costs should be fully allowed in future price controls.

Our work with University of Manchester has explored improved means of attributing costs to customer classes and has identified some of the practical constraints of aiming for greater precision. It would appear that companies (both suppliers and distributors) have markedly differing views on the extent to which a more sophisticated approach is appropriate. It seems

unlikely that an industry consensus will emerge without fairly clear guidance from Ofgem on what might be necessary to demonstrate compliance with statutory obligations and to allow government policy to be evaluated and supported. At the least, a concrete definition of 'undue discrimination' in the context of price setting may be needed. This could provide a minimum level of disaggregation that all DNOs would have to show in their cost attribution, while a clear definition of 'long run incremental cost' would aid transparency in the development of these models. This would need to be linked to the definition of connection costs to prevent double counting or missing the costs of any particular assets.

### ***Location variation***

One of the key areas of difference between contributors to the May 24 workshop was on the reflection of locational variations. In the past, the need to ensure customers faced costs appropriate to their circumstances has been achieved through a combination of generic use of system charges and site specific connection charges. The move to shallower connection charging has significantly weakened this link. It may be that the loss of precision is not important for lower voltage connections (an impact assessment might prove this point), but we agree that locational variations in costs should be identified in the cost modelling for higher voltage levels. This still leaves open the extent to which such costs are reflected directly in charges (for connection or use of system). Our work with UoM has shown that it is possible to create a cost model that could deliver nodal prices for all points on the distribution network. However the resource requirement to collate and install the necessary input data (e.g. asset, metering and cost data) into the model and its continued updating for the changes to the network (from new connections, reinforcement and refurbishment etc) currently throws into doubt the practicality of incurring the resultant operational costs.

An early practical solution, as suggested by the UoM, could be to employ representative modules for the lower voltage levels, namely the HV and LV network levels. This roughly aligns with the view that, at the moment, the metering and settlement processes limit our ability to attribute costs accurately at these voltage levels. Advances with the installation of smart metering down to the domestic customer may, in time, allow and encourage the distribution businesses to employ more sophisticated attribution methods to all the network voltage levels.

### ***Forward looking costs***

We agree that economic theory requires the use of long run incremental costs in price setting if we are to encourage efficient decision making. However we can see practical restrictions on the precision of any outputs. We therefore have sympathy with Turvey's view that we should only aim to be roughly right, and that the lumpiness of investment costs introduces the potential for instability if we do not look at investment needs over a sufficiently long period. We would support a joint project to explore the right balance between theoretical precision and practical and achievable results. This may be one area where industry collaboration in a project sponsored by Ofgem would be particularly helpful.

### ***Cost drivers***

Capacity is the key driver of costs on the distribution network, both at the time of connection and in the subsequent provision of distribution network for demand and generation customers. We would support the view that emerged at the workshop that this needs to be considered against fault levels and voltage requirements as well as thermal capacity. We would also

stress the importance of timing of customers' requirements. This is an essential component of our work with UoM and provides the costing detail that would allow time of use pricing to be applied.

We would not accept that DNOs are not exposed to the cost of losses. Through the distribution price control we incur a cost that covers not only the wholesale market cost but also an environmental premium. We agree that this is another cost signal that should be reflected in the design of prices for using our network, but the means of achieving this should be left to individual companies to determine.

### *Network Users*

Further research may indicate that it is appropriate to employ different approaches for the different network users, but until any work has concluded otherwise, we advocate the symmetrical treatment of demand and generation customers of a distribution network. We do not therefore support Newbery's view that adjusting costs can be achieved through balancing to allowed revenues for demand and generation customers separately. A single framework for the calculation of connection and use of system charges for network users must be matched by a single price control mechanism. We are encouraged by Ofgem's intention to move to this form of control from 2010.

### *Specific models*

We found the varied approaches in the three academic reports helpful in identifying issues that need to be addressed. Here, as in the Ofgem paper, there was a lack of clarity over the different modelling activities that are needed. We would welcome a straw man for an end-to-end process embracing both cost attribution and price setting, with emphasis given to the areas where commonality is desirable.

## **Chapter 4 – Detailed charging issues**

This chapter is generally concerned with the second of the two modelling areas identified above. The issues discussed relate more to the detailed construction of prices. The options may be constrained by choices on cost modelling, but the final decisions are likely to depend more upon the impact on the final market involving generators, suppliers and their customers.

### *Connection charging boundary*

We agree that connection and use of system charging must be considered together. This is difficult to achieve except at the time of a price control review. To change at any other time creates the prospect of a divergence between actual and allowed revenue or a distortion between customer groups. As Turvey has indicated, deep connection charging can preserve locational signals in a world of average use of system tariffs. If it is felt important to preserve a locational message in charging, connection charges may be the most appropriate mechanism for much of the market.

### *Charge application issues*

We recognise that there are large numbers of DUoS tariffs, many of which reflect past practice in PESs dating back to before privatisation. Such arrangements allow the preservation of supply tariffs without undue disturbance to price levels. We accept that such structures should be reviewed in partnership with suppliers. We would also note that

suppliers are free to propose new profiles for settlement purposes, which could trigger the introduction of new DUoS arrangements as well. This can provide a vehicle to deliver specific cost messages even where half hour metering does not exist. There is an inevitable trade off between the precision of cost reflectivity and the complexity of tariff structures. We would not wish to see too many constraints imposed on the options that DNOs could propose, where benefits could accrue to suppliers and their customers as well as to the network operator.

The workshop on 24 May spent some time on the issue of scaling of prices to match allowed revenues. The conflict between economic theory and natural fairness emerged. It is worth noting that the adjustments can be positive or negative depending on the relationship between model outputs and customers' views are likely to be different depending on the direction of the proposed adjustment. Here, too, the industry may benefit from a clear statement of Ofgem's preferences in terms of the relative importance of the objectives identified in para 3.13. It would be possible to interpret non-discrimination in a number of ways, for example preserving consistency in absolute levels of adjustment, percentage adjustments, rates of return by customer class or the integrity of marginal cost signals.

### ***Generator charging issues***

Any change to charging arrangements can affect the relative position of customers depending on when they were connected. This has always been true of the balance between connection and use of system charges. Disturbance will be dampened (but not removed) where large numbers of customers are involved. This must have been considered before Ofgem moved the connection boundary for demand customers. Similar issues will need to be considered for generators, but connection costs have tended to be more significant in the past. Nevertheless, we think it will be necessary to set a date from which all generators migrate to the new use of system charging. It will not always be practical to go back to original connection costs and charges and, as has happened with many EHV charges, there will need to be a switch from backward looking to forward looking prices. Ofgem can help to manage this on a consistent basis across the country.

The concepts of ancillary services and active system management are well established in transmission networks, but to date there has been little or no sign of their need or use within distribution networks. This may change with greater penetration of distributed generation connected to the distribution networks. Until analysis of the costs and benefits of an active distribution network combined with a market for the provision of ancillary services is undertaken there will be no development of either. To facilitate the development of ancillary services both the charging and regulatory frameworks should be flexible enough to allow the distribution network operators or the users of their distribution networks to purchase and/or sell these services.

We already include reactive power charges in our terms for both generation and demand (above a size threshold) because we recognise the importance of the cost signals provided.

### ***Development process issues***

We have tried to discuss the issues relating to consistency of approach in the sections above. We can see the superficial attraction of a common approach to pricing, but doubt that this will necessarily yield as many benefits as some parties may envisage. Even if it were possible to establish common models for both cost attribution and pricing, there would still be differences

between DNOs reflecting local circumstances, customer mix, network design and the nature of the metering stock. Added to this, is the potential loss of innovation if no new tariffs could be introduced without national agreement (between all suppliers and all distributors). This would not be a sensible response to a local problem, and may not provide a ready test bed for new ideas.

We would suggest initially that components of the cost attribution model could be standardised, including the definition of incremental cost. However, as we have noted above, the overwhelming bulk of the operational cost of any pricing model arises from the collection and maintenance of detailed network costing information. This would have to be done at a local level, so the scope for cost saving from standardisation would be modest. Ofgem has previously predicted costs of £1m to £4m per DNO. We would expect most of these to be incurred in local data gathering and processing rather than on collaborative actions.

Further moves towards a common approach should be left to market forces, assisted by the new obligations on DNOs to publish methodology statements. We would expect IDNOs to face identical obligations to DNOs and to be equally prepared to engage in debate on pricing issues.

Whilst acknowledging that consistency with transmission charging may be an issue for a small number of large customers, we would argue that predictability of charges (which can be achieved through transparency of approach) is more important than replication of methodologies.

## **Chapter 5 – Impact assessment**

We are disappointed that Ofgem does not have more to say on the potential impact of the project that they have been leading for the last year and more. If the potential benefits are not clear, the industry should not have been encouraged to commit so much resource to the debate so far. It seems much more appropriate for Ofgem to establish the benefits of a particular course of action before passing the baton to the DNOs to lead implementation. We would expect Ofgem to be much better placed to identify the effect on all parties than for this to emerge from DNO sponsored work.

There is also doubt over the scope of any assessment. The Structure of Charges project began by looking at the impact of increasing volumes of distributed generation on Distribution charges. The development of a commercial framework for such generators is a necessary response to recent, and predicted, market developments. However, any extension into a more fundamental review of DUoS charging would need to be justified against the criteria set out in Condition 4 of our licence. This would need to identify the drawbacks of the current approach and specify the benefit (against the relevant objectives) of any change.

We have discussed previously the scope for collaboration between DNOs. We would not envisage large cost savings from joint working, although we do recognise the benefits of sharing ideas within the industry, and taking account of the views of generators, suppliers and their customers. It is important that any changes are implemented in a way that is consistent with the resetting of price controls. It is likely therefore that any change to the general approach to DUoS and connection charging should be targeted at 2010, which would align with Ofgem's proposed migration date for existing generators and the implementation of a single price control covering both generation and demand use of the system.

## **Chapter 6 - Implementation**

As we understand the process envisaged by Ofgem, the responses to this consultation will provide an input to Ofgem's work on 'principles' to guide DNO implementation. We are very concerned that this appears to imply that the next step is for Ofgem to publish their view of the answer. This is the first consultation document that has explored, in detail, the longer term arrangements, rather than the interim solution, and we would not expect it to result in a clear view of the way ahead. We therefore believe it would be premature for Ofgem to specify solutions without further dialogue with DNOs. This will need to cover the development of models to better understand the nature of costs and to determine how costs may be converted into prices.

We had started work independently in order to be able to construct prices for generation use of system that were consistent with those for demand users. This was already a complex project. The apparent desire to seek a more common approach across the industry adds to the complexity of the design stage and is unlikely to significantly reduce the implementation burden.

The Implementation Steering Group has provided a valuable forum for discussion and development of ideas during the project to date. It has a balanced representation from the industry and has built up considerable knowledge since its inception. There is a need to continue with a similar forum during the development and implementation of any enduring solutions by the distribution businesses. We would not be unhappy for Ofgem to continue to chair such a forum, although the ultimate responsibility for proposing modifications to methodology will sit with the individual DNOs.

We also accept that there may be practical reasons for maintaining ISG separate from the DCF, while the volume of charging related work remains high. Eventually there may be merit in moving to a single meeting where all distributors meet with all suppliers and generators. Whatever formal arrangements are put in place will not replace the need for bilateral discussions on company specific issues.

## **Appendix 2 - Losses**

We are happy to publish the 'Loss Adjustment Factor Methodology' sent to Ofgem on 8<sup>th</sup> March 2005 on our website and to incorporate it in future editions of our licence condition 4 (Use of System Charging Methodology) statement, if this helps allay any concerns from the users of our distribution network. In March 2003 we circulated an explanation of some of our loss adjustment factor calculations to a sub-group of the BSC Panel in order to assist in their approval deliberations. This proved sufficient for the sub-group to approve the change in the loss adjustment factor proposed.

We do not see any further need to include the loss adjustment factor methodology within the licensing framework. There is sufficient protection for users through the use of system charging methodology approval process.

We are happy to support the development of a consistent framework for the calculation of losses for use by all distribution businesses, including the new independent distribution businesses. It should then be up to individual companies to justify, on technical or commercial grounds for example, their application of a specific approach under the framework. The framework should allow for the calculation of losses for all users of a



distribution network and be flexible to allow for the differentiation of approach for users of distribution network depending on their location, nature and operating regime. For example distributed generation connected to the distribution network can have a materially different impact on network losses from a similarly sized demand customer; as can similarly sized demand customers connected at different locations or voltages on the distribution network.