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Promoting choice and value for all customers

Cc: Maria Liendo, Jim McOrmish
(by email only)

Your Ref: PR-08-002
Our Ref: RBA/DPC/SOC
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Date: 5 September 2008

Dear Colleague,

Decision in relation to SP's modification proposal PR-08-002: Implementation of the 'G3' Use of System Charging Methodology

On 9 May 2008, ScottishPower EnergyNetworks ("SP") submitted to the Gas and Electricity Markets Authority (the "Authority")[1] a proposal to modify the use of system ("UoS") charging methodology for both the SP Distribution Limited ("SPD") and SP Manweb plc ("SPM") distribution areas. The modification seeks to amend the UoS charging methodology at all voltage levels for both demand and generation customers. SP has developed this methodology alongside SSE Power Distribution ("SSE") and Central Networks ("CN") as part of the G3 group.

On 6 June 2008 the Authority notified SP of its intention to consult on their proposal. On 17 June 2008 the Authority published its consultation on SP's proposal[2].

Having carefully considered the proposals made by SP and responses to our consultation, we have decided **to veto** SP's proposals to implement the 'G3' methodology. This decision was taken by judging the proposals on balance and giving due consideration to the Authority's principle objective wider statutory duties. As stated below, there are some aspects to the 'G3' methodology which we believe improve SP's present methodology. However, there are other aspects which we believe are a clear step back from the present methodology in terms of the relevant objectives. On balance we consider that the improvements are outweighed by the concerns we have with how the proposed methodology as a whole compares with the baseline. In addition - and set out in more detail below - we consider that charge changes from April 2009 on the basis of this modification followed by a possibility of further changes again from April 2010 as a result of Ofgem's proposed move to a common methodology[3] is unlikely to be in consumers' interests.

This letter sets out SP's proposal in relation to SPD, the views of consultation respondents and the detailed reasons for the Authority's decision.

Background to the proposal

SPD has licence obligations[4] to have in place three charging statements: the statement of UoS charging methodology, the statement of UoS charges and the statement of connection charging methodology and charges. The statement of UoS charging methodology outlines

[1] Ofgem is the office of the Authority. The terms 'Ofgem' and the 'Authority' are used interchangeably in this letter.
[2] The consultation is available on our website at:
http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=432&refer=Networks/ElecDist/Policy/DistChrgMods
[3] See interaction with common methodology decision at the end of this letter.
[4] Standard licence conditions (SLC) 13 -14.

charging methodology and charges. The statement of UoS charging methodology outlines the method by which distribution UoS charges are calculated. SP has a requirement to keep the methodology under review and bring forward proposals to modify the methodology that it considers better achieves the relevant objectives[5].

The Authority has for some time been stressing the need for distribution network operators (DNOs) to develop longer term charging arrangements. To date, only one DNO company, WPD has had a longer term charging methodology approved[6]. Partly due to the slow progress from other DNOs in developing longer term proposals, and partly due to the benefit to end consumers[7], the Authority took the decision in July 2008 to move to a common charging methodology across all DNOs[8]. The Authority stated in its decision document that it would consider those modification proposals already submitted to it, and requested that DNO's do not submit any further modification proposals pending the Authority's decision on commonality. We currently envisage that the Authority will take its final decision on the common charging methodology in Autumn 2008.

SP's proposal

SP's proposal comprised broadly four separate parts or individual methodologies which amend every aspect of their current charging methodology, as set out in **Appendix 1** below.

Respondent's views

Ofgem's consultation on SP's proposal closed on 29 July 2008. The fourteen responses we received were fairly mixed and DNO respondents were split between proponents of the G3 approach and proponents of other charging approaches. The detail of respondents' views is provided in **Appendix 2** below.

Our decision

The detail behind our decision is provided in **Appendix 3** below. In coming to our decision we have had to balance the improvements that this wide-ranging proposal achieves in terms of the relevant objectives, against the areas we consider the proposal to be worse than the methodology SP currently has in place.

We welcome certain aspects of SP's proposal, particularly on the EHV demand side where we believe significant improvements have been made against the current position. We consider this aspect of the proposal to be a more cost reflective approach which takes

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[5] The relevant objectives for the UoS charging methodology, as contained in paragraph 3 of SLC 13 of SPD's licences are:

(a) that compliance with the UoS charging methodology facilitates the discharge by the licensee of the obligations imposed on it under the Electricity Act 1989 and its licence;
(b) that compliance with the UoS charging methodology facilitates competition in generation and supply of electricity, and does not restrict, distort or prevent competition in the transmission or distribution of electricity;
(c) that compliance with the UoS charging methodology results in changes which reflect, as far as is reasonably practicable (taking into account of implementation costs), the costs incurred by the licensee and its distribution business; and
(d) that, so far as is consistent with sub-paragraphs (a), (b) and (c), the UoS charging methodology, as far as is practicable, properly takes account of developments in the licensee's distribution business.

[6] WPD's proposal was not vetoed in February 2007. Decision letter can be found at the link below: http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgMods/Documents1/16856-2007.pdf

[7] We consulted on potential commonality in April 2008, see http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=396&refer=Networks/ElecDist/Policy/DistChrgs. In responses to this consultation a number of parties made a case setting out the detriment caused by multiple charging methodologies.

[8] This decision is contained in the following document: http://www.ofgem.gov.uk/NETWORKS/ELECDIST/POLICY/DISTCHRGS/Documents1/FINAL%20July%20consultation%20letter_22_07_08.pdf. In this decision letter, the Authority stated that should responses back our intention to pick a model, that it would take a decision on the detail of the methodology would comprise the common approach in September 2008.

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greater account of developments in SP's distribution business. However, we believe that our concerns with the proposal regarding the EHV/HV generation model and the HV/LV demand model, are so fundamental as to outweigh the improvements made in other areas.

We do not consider it appropriate to approve a methodology which includes a generation model which produces counter-intuitive results. We also consider some of the input data to the model to be too subjective to produce cost reflective charges.

Consequently, on balance the Authority has decided to **veto** SP's proposal.

If you have any questions in relation to this decision letter or the issues raised within it, please contact Mark Askew at mark.askew@ofgem.gov.uk or on 0207 901 7022.

Interaction with Common Methodology decision

As stated in the background to this letter, on 18 July the Authority published its decision to move towards a common methodology for electricity distribution charging, subject to the necessary licence changes being secured. The proposed implementation date for the common methodology is 1 April 2010. SP has cited April 2009 as the date they would implement their proposal. We note the concern which both IDNOs and suppliers have raised over the prospect of two drastic charge changes within 12 months – first for SP's proposal and then, potentially, further significant changes a year later to adopt the common approach.

One of the relevant objectives against which this proposal is considered is to better facilitate competition in supply and generation. In coming to a decision on this proposal we have taken into account the possible impact on the supply market of this potential for a double pricing change. We believe that it would be highly detrimental to the business model of small suppliers, and other parties, for SP to implement this proposal and then, within a further 12 months or so, implement a different common charging methodology. We have therefore concluded that implementing this proposal could potentially have a detrimental impact on competition in supply and generation.

We should also point out that Ofgem's primary statutory duty is to protect the interests of customers. Given the potential for a double pricing change and the impact this can have on suppliers, we believe that customers could potentially be adversely affected if SP's proposal was implemented and a different methodology was implemented as the common approach a year later. Whilst we appreciate that there is a degree of hypothesis to this situation, as the final decision on the shape of the common methodology has yet to be taken, we believe that given our wider statutory duties, we are bound to take the move to commonality into consideration in reaching our decision.

Yours faithfully,

Rachel Fletcher
Director, Distribution

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Appendix 1 – SP's proposal

EHV Demand

SP propose to identify separate network groups at each voltage level. SP describe a network group as part of the distribution system that, under normal conditions, is not connected electrically to adjacent network groups at the same voltage level. For SPD there are 80 separate network groups at the 33kV level.

SP then undertake power flow modelling on the actual configuration of the network to establish the maximum baseline demand. SP's modification proposal indicates that this power flow analysis is then repeated at 1% increments of current demand up to 15% above the current baseline. The circuits, transformers, and substations which 'break' within each network group and at each increment are noted and their reinforcement costs calculated. SP consider that, at present the 15% is appropriate to cover all reinforcement which are required within the next 10 years.

The outputs from the power flow analysis are fed into the demand Forward Cost Pricing (FCP) model and combined with long term development data (LTDS)[9] which contains a growth rate for each network group. The growth rate is used to calculate the years until the reinforcements identified in the power flow analysis are needed. Only those reinforcements scheduled to occur within 10 years are considered.

A charging function then calculates a £/kVA/annum charge rate for each network group based on the reinforcement required for each network group and the years in which each reinforcement is due. The charging function SP use works by ensuring that the total recovered by the time of reinforcement is equal to the sum of the change in the net present value (NPV) of the cost of the reinforcement i.e. the difference in the cost of reinforcing the asset today compared to the cost of reinforcing the asset when reinforcement is actually triggered.

SP also chose to employ a time banded approach to recognise the potential for demand profiles other than peak demand to contribute to reinforcement. For EHV demand charging, only the peak period of demand is used to calculate the FCP charge rate.

HV/LV demand

SP propose to change their approach to charging at HV and LV level. At present, their statement of UoS methodology refers to establishing the cost per kVA in providing additional network capacity based on current design and network security standards. SP propose to base charges at HV and LV on the historical average costs they have incurred on their network over the previous 3 years. These costs are captured in the revenue reporting pact (RRP) data which all DNOs submit to Ofgem each year[10]. SP argue that basing their methodology on these inputs makes their proposal more transparent.

SP take the RRP data which specifically deals with the HV and LV expenditure on reinforcement costs plus refurbishment (replacement) costs, operation and maintenance (O&M) costs, pass through costs (NGET exit fees and licence fees) and customer service costs. SP then split these costs between customer classes based on the proportion of total demand each customer class places on the network at each voltage level (right up to 132kV) at different time periods. The proportion of demand which each customer class comprises is calculated using peaking probabilities and demand estimation coefficients.

[9] This is data which is provided under SLC 25 and is publically available. The data explains how DNOs plan to develop their network over the next 5 years given the current trends they are witnessing.

[10] RRP data has been submitted by DNOs to Ofgem since summer 2005. 2004/05 was a trial year for the data therefore SP has complete data for 2005/06, 2006/07 and 2007/08. Currently in their model, SP use the data from 2006/7 and outputs from predicted 2007/8 data (actual data was not available to them at time of submission).

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EHV/HV Generation

SP's proposals for EHV and HV generation are very different from their current methodology. In order to explain how the proposal works and to provide the context for the arguments detailed later in our letter, we feel it necessary to outline how we consider the proposed methodology works step by step.

1. Using published data from a joint Ofgem DTI report and a figure contained within National Grid's (NGET's) 7 year development plan, SP state that they predict the level of distributed generation ("DG") to connect to the network in the next 10 years to be 30% of demand. At current trends[11], for their SP Distribution (SPD) network, this gives a figure of 1,243MW which will connect in the next ten years.

2. SP then look at the proportion of generation currently connected at each voltage level[12]. They split the 1,091 MW in line with this proportion to get the following levels of DG predicted to connect at each voltage level.

Table 1- Levels of DG predicted to connect to SPD's network[13]

Voltage level	New Generation MVA
132kV	n/a
33kV	1091
HV	138
LV	13

3. These figures are then put to one side as the next step in the methodology begins. SP state that it is not practical to estimate a growth rate for generation in the same way that they do for demand. They state that the generation which connects tends to occur in blocks, triggering one-off reinforcement costs, rather than gradually connecting across the network. From this observation, SP have decided to use the idea of a 'test size' generator (TSG) as a proxy to drive charges. SP calculate the size of the TSG by taking the 85th percentile of the size of generators currently connected at each voltage level[14].

4. SP have split their network into a number of network groups (as detailed above). 'Marginal' cost charges are determined on a network group basis. SP then assume that a TSG connects to each network group within 10 years. They state that there is a 1 in 10 chance that the TSG will connect in each year, to produce a cumulative probability of connection over the ten years. This effectively becomes a growth rate as shown below.

[11] 'current' refers to as it presently stands. Our understanding from SP is that this figure will vary as demand changes and also if a government figure produces a different estimate from the 30%. This fact is not clear within SP's modification report.
[12] 'currently' refers to the present situation. The model is dynamic and this ratio will alter as different generation connects.
[13] It should be noted that these figures were taken from the charging models which SP have provided to Ofgem and not from the methodology report. The two sets of data are not identical and we have assumed that the correct data is contained within the charging model.
[14] Again, 'currently' refers to the size of generators currently connected. The figure will vary as new sized generators connect to each voltage level i.e. the size of the test size generator will vary constantly as new generation connects at each voltage level

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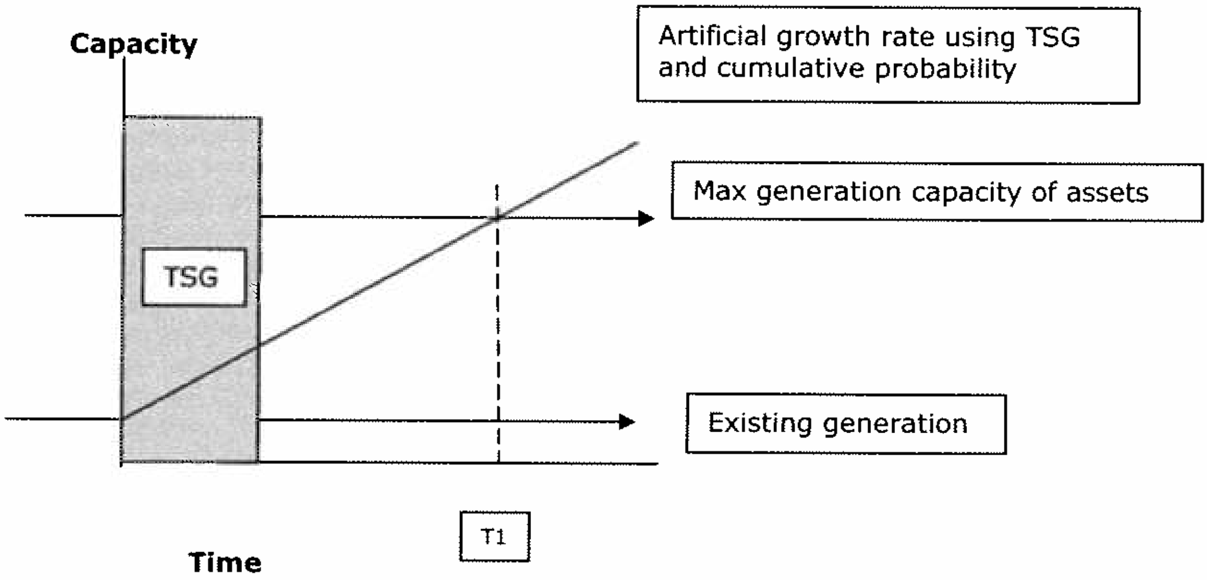
Figure 1.1



5. The years to reinforcement are then calculated by looking at when the artificial growth rate triggers reinforcement. This is represented in *Figure 1.1* by T1. These years to reinforcement are then fed into a charging formula which is discussed below.

6. The volume of generation expected to connect to the network due to a TSG connecting to each network group is not the same as that anticipated to connect according to the 30% of demand figure. This can be shown by the *Table 2* below illustrating the different generation predicted to connect according to the TSG calculation compared to the 30% of demand calculation at SPD's 33kV voltage level.

7. In order to scale the charges produced according the level of generation expected to connect due to the 30% of demand estimate, the reinforcement costs generated by the TSG growth rate are scaled down by the Pv factor in the table above. This Pv factor is calculated by dividing the 1091 MVA expected to connect according to the 30% assumption by the 2578 MVA expected to connect in the TSG assumption. This scaling is all done within the dynamic charging formula which takes the cost of the reinforcement, the years to reinforcement, the level of existing generation the capacity and the discount rate to produce a charge rate per network group. These separate charge rates result in 80 locational charges at the 33kV voltage level in SPD's area.

Table 2 – levels of generation predicted to connect to SPD at 33kv level

New MVA according to 30% of demand	1091
Network Groups	80
TSG	32.22
New MVA according to TSG approach	2578
Pv	0.42

8. Steps 1-7 produce the costs associated with generation. The final charge is calculated on a network group basis taking account of the 10-year horizon. The

charging function SP use also divides the marginal cost value produced, by the existing generation within each specific network group and the size of the TSG [15].

9. SP also recognise the benefit associated with the connection of DG. This is calculated by assessing the demand reinforcement (scheduled within 10 years) which the actual generator connecting to the system can defer. SP then multiply together the demand costs for the voltage of connection as well as the voltages above the point of connection and the P 2/6 generation contribution factors at the voltage of connection.

10. The specific generator benefits calculated are subtracted from the network costs calculated to give an overall 'marginal cost' £/kVA charge for a generator.

<u>LV generation</u>

SP has proposed that LV generators pay no costs for use of the system. They state that they do not foresee any generator reinforcement costs due to generator connections at LV. SP do however propose to apply the same methodology as they do at EHV and HV to ascertain the benefit which generation can have in deferring demand reinforcement which is due within the next 10 years.

[15] Including existing generation in the denominator therefore makes charges lower in cases where there is most existing generation.

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Appendix 2 – Consultation responses

We received 14 responses to our consultation on SP's proposals. The views expressed in these responses were split between parties who were supportive of, and parties who were concerned by, SP's proposals.

Supportive responses

SP and other members of the G3 group were strongly supportive of the proposed methodology. They commented that the model was an appropriate balance between cost reflectivity, stability transparency, simplicity and facilitating competition. SSE and CN praised the model for providing 128 different locational signals across SP's two networks. They also stated that the revised approach to scaling was appropriate as allocation was based on cost drivers which minimises the potential for distorting price signals as you effectively have a fixed adder for each voltage level[16]. SP commented how the HV/LV methodology was more transparent than the current approach and more cost reflective. Reckon LLP[17] asked Ofgem to consider that the use of historic expenditure on the network may be a better proxy for notional expenditure than estimates from internal systems.

Robin Hodgkins' response[18] was strongly supportive of SP's proposals. He stated that the different approaches used for demand and generation charging were appropriate given the different proportions of the network which they take up. He also states that SP are correct in adopting a 10 year forward looking model in that any model which looked beyond ten years would have to make large assumptions about future growth rates which are uncertain and thus could undermine cost reflectivity.

Whilst we recived no generator responses to our June consultation on SP's proposal, we did receive comments on SP's proposed methodology in the context of our work on a common methodology. In response to our July consultation on a common methodology generators were supportive of SP's FCP methodology on the basis that it provided stable charges. The Scottish renewable forum commented that the use of 'typical' size generators based on publicly available data provides a reasonable balance between transparency, simplicity and cost reflectivity. We consider it appropriate to take these views into account. However, given our wider concerns on the methodology which are highlighted in Appendix 3 and the matters alluded to in the covering letter, and that these views were given in the context of the consultation on commonality and not whether the Authority should approve or veto this proposal, we have not attached significant weight to them.

Unsupportive responses

WPD had some criticisms of SP's proposals. They state that the use of a test size generator will not be cost reflective for most real life generation connections. They also criticise SP's proposal which annuitises the cost of developing the network rather than providing cost signals for the impact which users can have on the network.

CE was generally unsupportive of SP's proposals. They stated that the approaches for demand and generation are inconsistent and that the approach to generation is based on historical trends rather than incremental cost. CE further commented that SP's approach to HV/LV charging 'failed' because of its use of retrospective data rather than being forward looking.

David Tolley and Furong Li[19] had some major concerns with SP's proposals. They stated that the generation model was a total cost approach which was based on backward looking data and could not provide an economic message to generators. They also stated that the

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[16] It is important to note that the fixed adder is different for each voltage level.
[17] Reckon LLP has been working for SP on their G3 charging project.
[18] Robin Hodgkins' consultancy is called MCM. Robin has been employed by SSE on their G3 charging project.
[19] David Tolley works for DLT consulting and Furong Li works at the University of Bath. Both of these organisations have undertaken work for WPD and CE.

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HV/LV methodology was fraught with difficulties in that it was a total cost model based on historical data which is unable to encourage economic efficiency. David Tolley and Furong Li also commented that the different pricing functions used in demand and generation made it hard to make a comparison between the two and the costs they place on the network.

At a high level IDNOs and suppliers commented that they felt that in the interests of stability Ofgem should be seeking to avoid any unnecessary charge change ahead of the further change to implement the common methodology.

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Appendix 3 - The Authority's decision

In coming to our decision we have considered the proposed modification against the relevant objectives and the Authority's wider statutory duties.

We appreciate that SP have invested considerable time and resources into developing this proposal. Not withstanding our decision, we would like to praise these efforts and SP's willingness to work alongside other DNOs in developing these proposals and contributing to the continuing wider debate on distribution charging methodologies.

As an on-balance decision, we set out below our evaluation of the four separate methodologies which at a high level comprise SP's proposal: EHV demand, HV/LV demand, EHV/HV generation and LV generation. We state in each case the aspects we consider to be a improvement on the current methodology and those parts where we did not see any improvement, or considered the proposal to be worse than the current baseline.

EHV Demand

We believe that the use of power flow analysis and long term development data to produce locational charges represents an improvement on SP's current charging methodology. That being said, we have concerns over the proposed method for calculating total charges via the proposed 'COG' allocation model and the fixed adder approach. These issues are discussed in the revenue reconciliation section below.

Power flow analysis and LTDS data

The use of power flow analysis on the actual configuration of the system allows charge rates to be calculated on the basis of when individual assets on the system reach capacity. SP use long term development data (LTDS) to calculate network group specific conditions and developments over time to feed into the power flow analysis.

The use of both LTDS data and individual growth rates makes the methodology more forward looking than the current approach and able to respond to changes which may occur on the network. Consequently, we consider that it is a more cost reflective approach which takes greater account of developments in SP's distribution business.

Locational charge

SP's methodology produces a locational 'marginal' cost charge (£/kVA) for each one of its network groups. SPD's region contains 80 such network groups at the 33kV level. We consider that this is another improvement on the current methodology. Whilst the current methodology provides a site specific charge, this charge is only produced once a customer has requested a connection at a point on the network. The improvement the proposal provides is that the locational signals would, presumably[20], be available for all potential customers to see. This allows an EHV demand customer to view these charges and consider the cost impact of where they wish to connect. We consider that this is more transparent than the current approach, and promotes a more efficient use of SP's distribution system for both initial connectees and customers already connected to the system.

In addition to these two main points, SP adopts a mathematical charging function to calculate the charge in any of the 10 years considered under their proposal. This charging function provides a form which shapes the recovery of charges in a manner which means that more costs are recovered as the network group assets get closer to reinforcement. We consider that this provides a sensible impact on charges, although we would highlight that the function is exogenous to the network itself and merely manipulates data from the power flow analysis into this sensible pre scaling charge.

[20] We say presumably as we have not received a revised SLC 14 UoS charging statement from SP to confirm that this would be the case.

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HV/LV demand

We believe that SP's proposals on HV/LV demand are not an improvement on the methodology currently in place and in some cases actually perform worse when compared to the current baseline.

SP's current methodology statement indicates that charges at HV and LV demand are calculated by looking at the cost per kVA in providing additional network or transformer capacity. SP argue that using RRP data as a basis for charging going forward represents a more transparent methodology. They also say that it is more cost reflective as charges are based on actual expenditure.

We do not consider that the proposal is more cost reflective than the current approach. What SP propose is to use a backward looking total cost model to produce charges which reflect historic expenditure. SP's current methodology produces charges based on providing additional capacity. We consider that this type of method is capable of sending better economic signals to customers by illustrating what the impact of their behaviour is on the network. Under SP's proposals charges would reflect the expenditure incurred on the network historically. This would not necessary tie in with the cost that customers current behaviour may place on the network. We consider the proposal is less able to take account of developments within SP's distribution business compared to their current approach.

Further, whilst we appreciate that SP's proposal is based on data which is submitted to Ofgem, this does not equate to the proposal being more transparent. The RRP data is not publically available and so the proposal is no more transparent to customers than SP's current approach.

In addition, relying on a historic approach may reflect costs delayed for operational or business reasons.

EHV/HV generation

We have a number of concerns with the generation side of the approach and believe that SP's proposal represents a step back from their current approach. Our concerns with the approach are on issues of simplicity, the use of assumptions, predictability and the degree of averaging within the model. Each of these is discussed in detail below:

Underlying assumptions

SP use a number of assumptions in their proposed EHV/HV generation charging methodology. A major assumption, from which all EHV/HV generator charges flow, is that total generation will equal 30% of demand in ten years. All data available to us demonstrates the difficulty involved in accurately assessing the future levels of DG which will connect to the network[21]. Given this level of difficulty and the fact that past estimates of DG connections have been proved grossly over ambitious, we would question the basis of calculating charges based on such estimates.

A second key assumption SP adopt is that the 85th percentile of all generation connected at each voltage level is representative of a 'test size' generator. In 99% of cases, the use of the 85th percentile will not be appropriate and we have fundamental concerns with the consequences of varying this assumption which are detailed below.

[21] This refers to FBPQ data which DNOs provide to Ofgem on a confidential basis. This data contains both past estimates for the DPCR 4 period and the level of DG which connected between April 05 and Sept 07. It also contains forecasts from DNOs over the expected level of generation to connect for DPCR5.

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In our June consultation document[22] on SP's proposals we undertook some analysis which illustrated that as you lowered the size of the TSG, charges went up. We commented that this appeared counterintuitive. SP responded to this consultation by stating that we had not reduced the costs associated with reinforcement, as the TSG used was smaller and would thus require smaller, less expensive assets to accommodate it. We accept that in some cases the reinforcement costs associated with accommodating a smaller TSG will be reduced[23]. Consequently we re-ran our analysis with the costs of reinforcement lowered by the same proportion as the reduction in the TSG. This analysis still demonstrated that unscaled charges went up despite the TSG being smaller and the reinforcement costs being smaller.

We consider that a model which produces *higher* charges as the costs incurred are *reduced* and are triggered at a *later* date, is not appropriate as this appears to be the opposite of what a charging model would be expected to produce. We consider that this does not send out the correct signal to customers and could thereby promote inefficient use of the network. We believe that this produces less cost reflective charges than the current approach.

Predictability

We consider that the proposed method is less predictable than the current approach in that it uses a number of assumptions which are constantly changing. SP have stated to us that the 30% of demand figure they use to scale the charges produced by the test size generator (TSG) approach is a variable input to their model[24]. They have stated to us that should there be some new government target figure produced on the level of DG to connect, then this would replace the 30% of demand figure.

Our analysis indicates that varying this 30% figure has a large impact on unscaled charges. For instance charges will halve when you reduce this figure to 15%. Where there are generation benefits available, varying this figure can have a larger impact on unscaled charges and, in some cases, this could move a generator from being subject to a positive unscaled charge to a negative one.

The level of variability in the proposal and the subsequent impact this variability has on charges means that any changes in the 30% level will result in substantial un scaled charge changes for generators. We consider that such volatility would facilitate less competition in the generation of electricity than is the case under SP's current, more stable, generation methodology.

The TSG is also subject to year on year variation. As different size generators connect at each voltage level the 85th percentile will alter and therefore the size of the TSG will alter. Again, given the impact that the TSG can have on charges, we consider that the proposal may well produce volatile charges.

We have stressed how the TSG and the 30% of demand volume are both variable and that this could lead to price voltality as these inputs change year on year. In addition, we should stress that the model also relies on looking at the ratio of generation connected at each voltage level to calculate how the 30% of demand volume is split between voltage levels. As new generation connects, this ratio will alter and will also have a year on year impact on charges.

[22] Please see footnote 2.
[23] We consider that the reinforcement costs are 'lumpy'. In some cases less generation may still require the same reinforcement costs and in other cases these costs may fall. It will depend upon the specific circumstance involved.
[24] This fact is not at all clear from SP's modification report.

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Averaging

We also have concerns over the level of averaging in SP's proposed generation approach. SP assume that a test size generator connects to each network group within 10 years and charges are calculated on the basis of recovering the costs of reinforcing the network group to accommodate the TSG. It stands to reason that in practice a test size generator will not connect to each network group.

We appreciate that through the use of LTDS data and power flow modelling that SP are constantly taking account of developments on the network when applying the TSG methodology. However, the TSG applied to each network group, each year, as an 'increment' to produce charges, does not necessarily tie in with what generation will actually connect to the network group and what reinforcement charges are actually triggered. As David Tolley and Furong Li allude in their response, it is a total cost approach which cannot provide the correct economic signals to generators.

In addition, we would also highlight the fact that within SP's charging function on generation, they chose to divide the reinforcement cost calculated for generation in each network group, by taking account of both the existing generation connected within that network group and the size of the test size generator. We are unclear of the basis for including existing generation and would stress that it has the effect of diluting the charge rate for network groups. This is particularly the case for networks groups which have considerable existing levels of generation and which are likely to have higher reinforcement costs. We do not consider that this step in the methodology is appropriate and believe that it has a detrimental impact on the cost reflectivity of the proposal.

Locational signals

As with the EHV demand model, we would flag the benefit of having locational charge signals which are presumably published upfront[25]. However, we would highlight that having an upfront locational charge is not an improvement when the methodology producing this charge is not cost reflective. Due to the factors discussed above, the locational signals produced may not promote an economic use of the system. Further, the locational signals would not facilitate greater competition in generation due to the potential for instability as the inputs into the methodology vary on an annual basis.

Simplicity

Given our need to include a step by step explanation of how the EHV/HV generation methodology works, we do not consider that SP's proposed method is a simple approach. We consider that it could be very difficult for a generator to understand how its charges were calculated from the detail provided in SP's proposed methodology statement. We consider that SP has unnecessarily developed a more complicated and complex methodology for generator charges than they currently have in place. We consider that this complexity will make it more difficult for potential new generators to understand and manage the risks they face. This could potentially lead to less competition in the generation of electricity.

LV Generation

We consider that the recognition of the benefit which generation can provide in deferring demand reinforcement is an improvement on SP's current approach and a step forward in terms of cost reflectivity and promoting a more efficient use of the network. We believe that the use of P2/6 contribution factors to look at the benefits which generation can provide at all voltage levels right up to EHV is an improvement on the current approach.

[25] Please see footnote 13.

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We also consider that SP's proposal not to charge use of system for generator reinforcement costs at this point in time appears appropriate. This judgement is based on th fact that evidence from the data available to us points to there being minimal use of system reinforcement costs associated with LV generation.

Revenue Reconciliation

All DNOs require some form of revenue reconciliation, or scaling, in order to match the revenue recovered from their charging model to their allowed revenue under the price control. Currently SP use a 'fixed percentage' approach whereby the difference between recovered and allowed revenue is simply divided equally amongst all customer groups. SP argue that this is unfair for EHV/HV users, who effectively pay for costs which they haven't triggered.

SP have proposed a new approach for demand charging which first allocates "all other relevant costs"[26] and then produces a 'per kVA, per voltage level' adder. This adder is calculated on the basis of the estimated modern equivalent asset value (MEAV) of the regulated assets at the various network voltage levels. The approach provides a separate fixed adder for each voltage level.

In relation to cost allocation, we are concerned about the costs included in this category having looked at the detail behind SP's proposal. In particular, we note that the description of the COG approach is not very clear in the modification proposal. The approach looks at historic costs and we believe that references to refurbishment costs in SP's proposal include asset replacement. Although charging such costs to customers reflects absolute costs to existing customers, it is not cost relective in terms of incentivising future economic development and investment on the system. We therefore believe that elements of the COG approach have the effect of accentuating backward-looking signals. In terms of asset replacement, we note that the vast majority of assets will need replacing at some point in time and believe that this should not affect the pricing signals given in tariffs.

In terms of the fixed adder approach, we are concerned that the price differential between the different fixed adders at each voltage level may become the predominant economic signal a customer receives. Thus the cost signal which demand customers see is not the network group which has the most capacity and least costs, but which voltage level has the least scaling. We believe that this may produces perverse incentives to customers to connect at different voltage levels rather than to connect where the costs they incur are the least. We are not persuaded that this promotes economic behaviour in use of the system.

Reactive Power

SP have proposed to remove reactive power charges at EHV level. They cite that because they have moved to charging on a kVA basis and have no kWh (unit charge) the customer has an incentive to have the best power factor possible. We consider this is neither better nor worse than the current methodology. Both methods appear to provide a financial incentive on the customer to improve their power factor.

At HV/LV SP propose to alter their approach for reactive power charging. SP's modification report states that they propose to subtract the capacity charge from the network costs as capacity charges recover part of the reactive cost element. The fixed cost is also removed from the network costs. SP then look at the load factor for each voltage level to derive a p/kVAh. The incremental cost of reactive power is calculated by multiplying this figure by the increase of the kVA with the kVAr.

We believe that SP have provided very little detail on the precise mechanisms of this reactive power approach in their modification report other than to say that this aspect of

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[26] Paragraph 5.4 (page 10) of SP's modification proposal. This approach is sometimes referred to as the 'COG' method.

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the proposed methodology is broadly in line with that of ENW. Due to this lack of detail, we have not been able to assess the full impact of this aspect of SP's proposals. However, on the basis that it is similar to ENW's approved approach, we consider that it is likely to have benefits above SP's current approach.

Other concerns

In addition to the points we have raised above, we believe we should also mention some other more general concerns which are common to many aspects of SP's proposal.

Use of a ten year recovery period

For both EHV demand and EHV/HV generation, SP propose that they will only recover costs which are anticipated to be triggered within the next 10 years. At present, we understand that UoS charges are based, roughly, on recovering the costs of assets over their lifetime rather than within 10 years. We consider that recovering costs over a proxy for the lifetime of assets is more cost reflective than notionally recovering them "all" (pre scaling) within 10 years. We therefore agree with Frontier Economics'[27] comment that the use of a 10 year horizon to view costs is not appropriate as the proposed model treats any costs expected to be incurred after these 10 years as zero. A longer time period would therefore be more appropriate for a forward looking model.

Different treatment between demand and generation

In our June consultation document[28] we asked for views on the extent to which it was appropriate to have an asymmetric approach to demand and generation charging. We received few specific comments on this. However, we note from SP's proposal that they consider the cost drivers for demand and generation to be different. On the basis that the cost drivers are different, we would agree that an asymmetric approach is warranted.

IDNO tariffs

As mentioned in our consultation document, SP's proposal contains no IDNO specific tariffs whereas SP had submitted an separate, earlier modification proposal on IDNO charging[29]. We veoted SP's original IDNO modification proposal on 31 July. We appreciate that since submitting this proposal, SP submitted a further proposal capturing IDNO charges under a G3 charging method[30] on 2 July 2008. We notified SP of our decision to consult on their joint G3 plus IDNO proposal on 30 July 2008.

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[27] Frontier Economics were commissioned by SP to undertake an independent study of SP's proposal prior to submitting the proposal to Ofgem. Frontier Economics make this point on page 50 of their report. Whilst this was not a consultation response, we consider that they make some valid observations which should be considered as part of this decision.
[28] See footnote 2.
[29] SP PR-008-003, available on our website at:
http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=483&refer=Networks/ElecDist/Policy/DistChrgMods
[30] SP PR-008-003 which contains the G3 proposal and IDNO charging. This proposal can be found on Ofgem's website at:
http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgMods/Documents1/SPEN%20IDNO%20charging%20proposal%20under%20a%20G3%20methodology.pdf. Following our notification to SP of our intention to consult on this proposal on 30 July 2008 we plan to publish the subsequent consultation paper shortly. This consultation will be published on our website at:
http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgMods/Pages/DistChrgMods.aspx.

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