

CONSULTATION DOCUMENT

**Modification Proposal to the
Connection Charging Methodology**

CCM-M-07

**Implementation of “PLUGS” –
Change to Connection Boundary and associated removal of
Land Charges and Type B Termination Charges**

AND

Change to Calculation of Site Specific Maintenance Charges

12 September 2003

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1. Executive Summary

This paper sets out for consultation National Grid's proposed modification to the Connection Charging Methodology to implement changes to:

- (i) the connection boundary and associated removal of Land Charges and Type B Termination Charges;
- (ii) the method of calculating Site Specific Maintenance Charges

It provides consistency with the proposed Connection and Use of System Code (CUSC) Amendments CAP052: "Removal of Land Charges" and CAP053 "Revision of Site Specific Maintenance Charges".

It also includes a synopsis of user views and issues raised regarding the content of this proposed modification as received following National Grid's July 2003 Initial Charging Methodologies Consultation. National Grid's response to each of the points raised by users is provided to indicate why National Grid determined it was appropriate to raise this modification.

This paper is published on the National Grid website at the following address:

www.nationalgrid.com/uk/indinfo/charging/mn_modifications.html

2. Introduction

National Grid is obliged under the Transmission Licence:

- (i) to make revisions to the Charging Statements in order that the information set out in these statements shall continue to be accurate in all material respects;
- (ii) to keep the Connection Charging Methodology at all times under review;
- (iii) to make such modifications of the Connection Charging Methodology as may be requisite for the purpose of better achieving the relevant objectives, which are:
 - a. to facilitate effective competition in the generation and supply of electricity and (so far as is consistent therewith) to facilitate competition in the sale, distribution and purchase of electricity;
 - b. to result in charges which reflect, as far as reasonably practicable, the costs incurred by National Grid in its Transmission Business;
 - c. to take account of the developments in National Grid's Transmission Business;

and, so far as is consistent with sub-paragraph (a) above;

- d. to facilitate competition in the carrying out of works for connection to National Grid's Transmission system.

Before making a modification to the Connection Charging Methodology, National Grid is also required by the Transmission Licence to consult with CUSC Users on the proposed modification and allow them a period of not less than 28 days within which to make written representations. The Authority can consent to a shorter consultation period.

The purpose of this document is to set out for consultation National Grid's proposal to modify the Statement of the Connection Charging Methodology to meet the Relevant Objectives in its Licence, namely Condition C7A 5(a) for the change of connection boundary, and Conditions C7A 5(b) and C7B 11(b) for the change to calculating Site Specific Maintenance Charges.

3. Background to the Issues

In the context of its relevant Transmission Licence obligations and reinforced by recent commitments made to Ofgem, National Grid has been undertaking a Review of its Transmission Charging Methodologies, covering both Connection and Use of system issues, in consultation with users.

This review originally commenced in February 2002 and has progressed through the media of workshops, discussion papers, industry consultations and seminars.

As part of the process, in September 2002, National Grid published a number of Connection Charging "strawmen" for consideration by the industry and, subsequent to the Connection Charging Review workshop held in September, two "strawmen" namely the "Plug and Socket" and "Plugs only" strawmen were selected for further development.

Users also indicated at the September 2002 workshop that they believed that the current calculation process for Site Specific Maintenance was complex and non-transparent, leading to a barrier to contestability. In addition to users' concerns, National Grid had identified a number of shortcomings with the process, regarding restrictions placed on cost reporting systems and a requirement for manual intervention in the charge calculation process each year.

Hence, in the Connection Charging Review Initial Conclusions Report (November 2002), National Grid highlighted the initial conclusions on potential connection boundary change and areas for further work. It also put forward a number of potential options for Site Specific maintenance charging that could be offered within the scope of the Charging Review.

In February 2003, National Grid made eight formal commitments to Ofgem to review and, if appropriate, bring forward proposals for reform of the contractual framework and charging methodologies, above those made in the interim period, with a timescale for implementing any proposals of April 2004. These commitments are listed in the Ofgem publication, "NGC system operator incentive scheme from 1 April

2003 – 31 March 2004: Final Proposals and Statutory Licence Consultation, March 2003”.

In March 2003, National Grid presented its rationale for progressing the “Plug only” model (“Plugs”) to the Transmission Charging Methodologies Forum namely;

- Simplicity
- Transparency
- Long term robustness
- Improved visibility of contestability
- Consistency with regulatory vision

In April 2003, National Grid held a Connection Boundary Seminar, which presented the proposed connection boundary move associated with “Plugs” and highlighted other associated changes to areas such as land charges and termination charges to the industry.

Based on the responses received at the seminar, and as indicated in its Boundary Seminar Conclusions paper published in May 2003, National Grid concluded that the proposed change to the connection boundary was broadly acceptable to users. Views were sought from users on the Boundary Seminar Conclusions paper and subsequent responses indicated a large majority supporting its conclusions, although some users raised areas of concern.

In the meantime further analysis of the options had been undertaken. Issues regarding the improvement of the Site Specific Maintenance methodology and its contestability were outlined at the Transmission Charging Methodologies Forum (TCMF) on 10 June 2003.

Hence when, in July 2003, National Grid issued an Initial Charging Methodologies Consultation where it outlined its conclusions from the review process, it sought to address any areas of concern and outline a way forward. National Grid indicated a number of proposed amendments to the current Charging Methodology for Connection (and Use of System) for implementation with effect from 1 April 2004. It sought further responses from users on both its review conclusions and proposed amendments to Charging Methodology, before tabling formal amendments to the Charging Methodology statements.

A synopsis of users’ responses received regarding the proposed connection boundary change and changed method of calculating Site Specific Maintenance charges are outlined in Section 5, together with National Grid’s views on each of the main points raised.

Users were broadly in favour of the proposed change to the connection boundary and associated changes by a ratio of 2:1, reinforcing National Grid’s view that it would better meet its relevant Licence objectives. In addition, National Grid did not believe that the arguments raised by those opposed to the change were sufficient in the context of its relevant Licence objectives to justify retaining the status quo. Hence, National Grid determined it was appropriate to raise a formal modification to change the definition of the connection boundary.

Of those users who provided comments on the proposed changed calculation of Site Specific Maintenance charges, those broadly in favour of the proposed change again outweighed those against change by a ratio of 2:1, reinforcing National Grid's view that it would better meet its relevant Licence objectives. In addition, National Grid did not believe that the arguments raised by those opposed to the change were sufficient in the context of its relevant Licence objectives to justify retaining the status quo.

Of those who expressed support for changing the calculation of Site Specific Maintenance charges half expressed no preferred method of reconciliation but half did express a preference for a short term. Hence, National Grid determined it was appropriate to raise a formal modification to change the method of calculating Site Specific Maintenance charges with a one-off reconciliation in July or Year N+1.

National Grid has also concluded that it would be appropriate to combine the two proposed changes to the connection methodology into a single modification proposal. This decision was made following the identification of major practical difficulties which would arise for National Grid if only the connection boundary change were to proceed. The difficulty lies in the lack of availability of 3 years of historic Site Specific Maintenance data consistent with the revised connection boundary definition if the boundary change alone were approved.

Thus this modification paper proposes the required changes to the Statement of the Connection Charging Methodology (see Appendices) introduced by:

- (i) the adoption of "Plugs", specifically the change in definition of connection boundary, and the consequent change in treatment of both land charges and termination charges; and
- (ii) the proposed change to the method of calculating Site Specific Maintenance charges.

4. Explanation of the Issues

The changes to the Connection Charging Methodology are required to take into account (i) the proposed implementation of "Plugs", specifically the change in definition of connection boundary, and the consequent change in treatment of both land charges and termination charges, plus (ii) the change to the calculation of Site Specific Maintenance charges.

Connection Boundary

Under the new "Plugs" proposals, National Grid would redefine the connection boundary such that all assets that are shared or could be shared are moved from connection into infrastructure. This results in substations and associated site infrastructure and land, generation only spurs, and shared transformer circuits moving into infrastructure.

As a consequence of the boundary change proposal, changes are also required in other areas of the Connection Charging Methodology, specifically;

Land Charges

Due to the proposed change to the connection boundary under “Plugs”, site infrastructure and land costs would move to be within infrastructure. It is therefore proposed to remove Land Charges from the Connection Charging Methodology.

Termination Charges

Also due to the proposed change to the connection boundary under “Plugs”, there would no longer be any shared connection assets. “Type B” termination charges would therefore be obsolete and the Connection Charging Methodology needs to be modified accordingly.

Site Specific Maintenance Charges

National Grid proposes to levy the Site Specific Maintenance charge on a cost pass through basis, rather than using a 3 year historic average to apportion a total maintenance forecast.

4.1 Explanation for Proposed Change to Connection Boundary

The following sections re-iterate the material provided to users in the July 2003 Initial Charging Methodologies Consultation.

4.1.1 Substation assets

Prior to and during the Charging Review users have raised issues with aspects of the Connection Charging Methodology which they felt were restricting competition and were barriers to new entrants. Many of these issues were caused by the unpredictability and volatility of connection charges, driven by factors outside of the user’s control.

Examples of such issues are described below.

New Connections

When another user joins an existing connection site the connection charges for each of the connectees will change. Each user’s connection charges will depend on a number of factors including what new connection assets are required, whether there is any reconfiguration of the circuits connecting the substation, which type of connection assets are installed, and the attributes of both the new user and existing users. The original user’s connection charges could be higher or lower after the arrival of the new user, and whether the new user benefits at all from sharing may not be clear.

Disconnection

When a user partially or fully disconnects from a connection site the termination charges levied on the disconnecting party will depend on National Grid's assessment of which connection assets are made redundant. The departing user will then pay a termination charge for the assets made redundant, and a further charge for their allocated share of each of the remaining connection assets. This second payment is used to protect any remaining users from an increase in the finance element of the connection charges on an asset by asset basis. Furthermore there is also a charge for removal and making good, which may be complicated if National Grid determines that it is more economic to defer the physical removal of the connection assets.

The termination charges can therefore be unpredictable for a disconnecting party, and the charges for the remaining users are similarly uncertain. Each user's overall charge will depend on the commercial decisions of another, and potentially competing, party. In an extreme example, a longstanding user may be forced to pay termination charges for relatively new assets that were only installed recently due to the connection of a second user.

System Developments

National Grid's development of the transmission system can impact on connection charges both in the short and longer term.

Under the existing methodology substations which are connected by more than four circuits qualify as a bussing point. This results in infrastructure taking a share of the busbars, bus couplers, bus sections and outgoing feeder circuits. The share of these assets allocated to Transmission Network Use of System (TNUoS) charges will be at least equal to that allocated to other users, but can in some cases be the majority share.

If National Grid is required to develop the system in such a way that the number of circuits connecting a substation moves through the bussing point threshold of four, the user's charges can change significantly.

National Grid may also conclude that in order to meet the Licence obligations it is necessary to replace a substation at a different voltage. This would normally take the form of a 275kV substation being replaced with a 400kV arrangement. The higher voltage substation would normally be included within the user's connection charges at the appropriate time.

Sharing Incentives

It can be seen from the situations described above that there are both benefits and disadvantages of sharing a connection, and these pros and cons are seen only by the parties connected at the site. It is not therefore necessarily clear to a new user whether there will be a sharing incentive for connecting in any particular locality.

When considering a new connection, National Grid is required to connect the user in the most economic and efficient manner. National Grid does not provide connections on the basis of minimum connection charges. This is the well established and licence driven principle of design first, and charge second.

National Grid's Licence standards used to develop the transmission system will normally be the primary driver of the connection works and effectively therefore any benefit of sharing. The user's ability to respond to connection charging sharing incentives can therefore be limited.

Conclusions on Treatment of Substations

National Grid believes that the issues described above could restrict competition. Furthermore, users should be reasonably protected against investment decisions driven by wider system developments and for new connections, the configuration of the existing network.

Hence the change in connection boundary proposed under "Plugs", removing substation and associated site infrastructure from users' connection charges would provide a benefit such that it should be adopted as a change to the Connection Charging Methodology.

4.1.2 Generation Only Spurs

There are three main issues associated with the current arrangements for charging for generation only spurs:

- Represents a barrier to new entrants
- Discourages utilisation of existing spur capacity
- Users are exposed directly to additional costs associated with the existing network and National Grid's system development decisions

Each of these issues is discussed in more detail below.

Barriers to new entrants

Generation only Spurs raise a number of issues that may result in barriers to new entry. A new generator requiring the construction of new spur capacity will be charged for the majority of the spur, including an allocation of any switchgear at the remote end of the spur, within the connection charge. The generator will also be liable for termination liabilities linked to the net asset value of the spur.

A new generator connecting to an existing spur will take a share of the charges and liabilities for the spur, including an allocation of any switchgear at the remote end of the spur.

A generator is also exposed to the increase in charges associated with the asset replacement of a spur. A new entrant may connect to an existing spur which will shortly reach the end of its commercial life, and would therefore see a significant increase in charges upon completion of the asset replacement. New spur connected generators can therefore incur significantly higher charges than a non-spur connected power station.

The different treatment of remote and local transmission circuitry may also restrict competition. For example, under the current arrangements a new non-spur connected generator may require a new £100m double circuit overhead line in a distant part of the network, in which case cost reflectivity would be delivered via the TNUoS methodology. A second generator of comparable size may require a similar but spur connected double circuit costing £100m, but with no remote infrastructure requirements. In the spur connected example the generator would pay for the £100m spur directly through connection charges.

If, in both cases, the additional circuits had been infrastructure, a consistent cost message, not possible under the current methodology, would have been delivered.

Utilisation of existing spur capacity

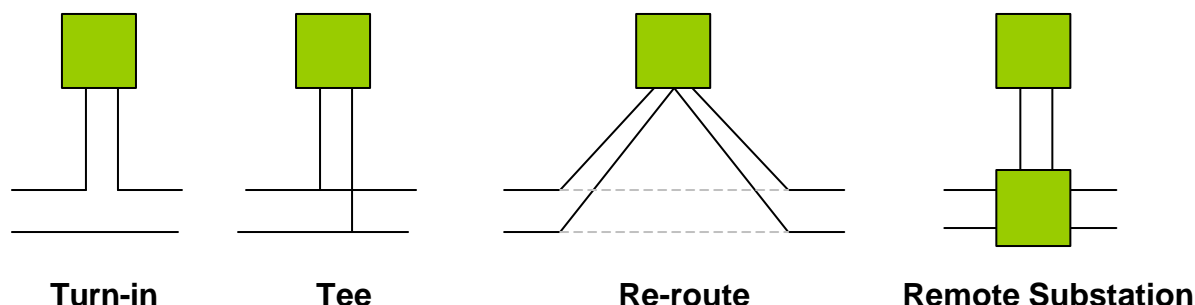
As described above, a new user connecting to an existing spur will pay connection charges for the spur. This arrangement encourages new entrants to use non-spur transmission assets over spur connections. However, once transmission assets are on the ground, it would seem appropriate to promote utilisation of them all equally by new connectees, rather than just non-spur circuitry. In addition to a spur connected generator incurring the cost of the spur, there is a lesser incentive on other users to share the spur connection assets, which could alleviate the first user's higher charges.

Network interaction

The type of spur connection will have a significant impact on the level of connection charge and associated liability. Generally, there are four types of spur connection:

- Turn-in
- Tee
- Re-route
- Remote Substation

These are illustrated in the diagram below.



For the first three options a connection charge is currently levied for the additional circuitry, however for the fourth option, in addition to the spur charge for the new circuit, a share of the remote substation is included in the charge. The selection of

the connection option may be influenced by factors outside of the control of the generator such as the existing network, actions of other users, developments for wider system needs, planning issues, or minimum overall cost.

An example which illustrates this issue is that of a new generator connecting to an existing transmission circuit. If the closest point to the new power station is an existing substation, the preferred connection is likely to be into the existing facility. The spur connected generator would then pay a share of the existing substation in addition to the spur circuitry itself and the local substation. This would seem contrary to any principle aimed at encouraging the use of existing transmission equipment.

If there is no existing substation to connect into then it would normally be acceptable to connect via either a turn-in or a tee. With no substation at the remote end of the spur, the connection charge to the new entrant would be significantly lower.

In the scenario where there is an existing remote substation, the user may suggest that National Grid should tee the spur connections into the circuits just outside of the remote substation. This would involve a slightly longer spur, but this arrangement would allow the generator to avoid the connection charges for the remote substation. This would only be acceptable if the overall design was compliant with National Grid's licence obligations including the technical planning and operational standards.

Conclusions on Treatment of Generation Only Spurs

National Grid believes that the current rules for spur-connected generation could restrict competition. National Grid believes that in order to ensure consistent treatment of all transmission circuitry it would be appropriate to include all spurs within the TNUoS methodology.

Furthermore, users should be reasonably protected against investment decisions driven by wider system developments and for new connections, the configuration of the existing network.

Hence the change in connection boundary proposed under "Plugs" would provide a benefit by removing generation-only spurs from users' connection charges and as such it should be adopted as a change to the Connection Charging Methodology.

4.2 Explanation for Proposed Change to Land Charges

The current methodology provides for a land charge to be levied where National Grid is required to purchase or lease land as a result of a user application for new connection assets. The land charge is a direct pass through charge where the cost is in the form of an ongoing lease payment. Where the land has been purchased (or where land has become operational), the annual land charge is 6% of the land cost, which is re-valued each year by a measure of RPI.

There is no equivalent charge for any land costs incurred at existing sites, which can be significant. Pre-vesting land costs are effectively recovered through infrastructure charges.

Since the proposed change to the connection boundary under “Plugs” would result in substations and associated site infrastructure moving outside of the connection boundary, it is proposed to move all land charges into infrastructure. This would also have the benefit of removing the different treatment of land charges between pre-vesting and post vesting connections described above, and as such it should be adopted as a change to the Connection Charging Methodology.

National Grid therefore proposes to update the Connection Charging Methodology to remove land charges into infrastructure.

4.3 Explanation for Proposed Change to Termination Charges

The current Connection Charging Methodology stipulates that users are liable for Type A and Type B termination charges upon full or partial disconnection, along with any costs of making good. In addition, users are required to provide security for any post vesting termination charge liabilities.

Type A terminations relate to connection assets made redundant by the disconnection and reflect the Net Asset Values (NAV) of the appropriate connection assets.

Type B termination charges are also based on the NAV but are levied on the allocated NAV for any shared assets that are not made redundant. Type B termination charges are used to protect the remaining user’s capital charges.

Users are refunded an appropriate proportion of the termination charge if the asset is subsequently reused either as a connection or infrastructure asset. Type B terminations may also be refunded if a new user connects at the site, or if a remaining user modifies their connection. As a result of the proposed changes to the connection boundary under “Plugs” there would be no shared connection assets, therefore Type B termination charges would not be required. Type A termination charges and making good charges would remain.

Hence, National Grid proposes to update the Connection Charging Methodology to reflect the fact that Type B termination charges would no longer be required.

4.4 Explanation for Proposed Change to Site Specific Maintenance

The changes to the Connection Charging Methodology are required to reflect National Grid’s proposals to change the method for calculating Site Specific Maintenance charges. Specifically, National Grid proposes to levy the charge on a cost pass through basis.

4.4.1 Current Methodology

The current methodology calculates Site Specific Maintenance charges each year using the most up-to-date three complete years of actual maintenance cost information. This data is used to apportion a forecast of the total maintenance to derive a site specific charge. Specifically, in any given year N the Site Specific Maintenance charges are based on an analysis of the latest three full years of

maintenance cost information (N-4, N-3, and N-2), which is used to apportion the total forecast maintenance cost for Year N.

4.4.2 Rationale for Change in Methodology

The current calculation process is deemed by some users to be complex and non-transparent, leading to a barrier to contestability.

In addition, National Grid finds administering the process can be restrictive and onerous, particularly due to the restrictions placed on cost reporting systems, which for the methodology to work require three years of costs being recorded and booked in a consistent manner. There is also a requirement for manual intervention in the charge calculation process each year to handle any changes to connection assets e.g. new assets which are in service for only one or two of the three years being utilised in the averaging process.

Furthermore, whilst the use of forecasts is consistent with the approach adopted for contestability it is not strictly cost reflective of the maintenance costs incurred by National Grid and this is deemed by National Grid to be of higher priority.

4.4.3 Proposed Methodology Change

The proposed change to the connection boundary would result in clearly defined connection assets for which the user could contest the maintenance. Currently the extent of the contestability is not visible to the user as the contestable assets and services are a subset of the total maintenance, and a single maintenance charge is levied.

With the increased visibility, it is appropriate to review Site Specific Maintenance charges against the Relevant Objectives, in particular to ensure the Site Specific Maintenance charge is as cost reflective as possible to ensure the appropriate messages are given to the user.

The new Site Specific Maintenance charge would be split into two elements;

- (i) Asset Specific maintenance costs
- (ii) Non-Asset specific general overheads

Proposed Asset Specific Charge

National Grid intends that asset maintenance charges would remain site specific and would continue to be levied on an annual cost pass through basis. However, the proposal is that, in contrast to the current methodology, the actual annual site specific asset maintenance costs each year would be passed straight through in that year to the user.

Initially, an indicative charge based on an average apportionment of GAV would be levied across all sites. Subsequently, there would be a site specific adjustment made to reflect the actual costs incurred. The final asset specific maintenance

charge would therefore be based upon costs booked against particular connection assets plus an allocation of general costs.

This process is necessary because the asset maintenance costs in any year are not known until after the event and it would therefore be necessary to bill the user initially on an indicative basis, with a reconciliation exercise once the final cost data is available in the following year. In line with National Grid's preference and following users' responses to the options put forward in the July 2003 consultation document, National Grid proposes to apply a one-off reconciliation charge in July of year N+1.

Some users suggested that National Grid could derive indicative Site Specific Maintenance charges for each individual connection site. However, whilst such an exercise is possible, it is a highly resource intensive and time consuming exercise for National Grid to undertake.

Given the relative magnitude of the charges and the small magnitude of likely variation from a national average figure, National Grid believes there is limited benefit to adopting such an administratively onerous process. It would be more appropriate to only undertake such a site specific exercise upon request from a user actively considering undertaking their own connection site maintenance for relevant contestable assets.

Hence, subject to individual users' requests for contestable maintenance purposes, National Grid proposes to base the indicative site specific asset maintenance charge for all users on a flat percentage of the GAV. The use of an average indicative charge will minimise the overall reconciliation payments. Based on the average of maintenance charges, a figure of 0.5% is anticipated for 2004/2005.

Proposed non-Asset Specific Charge

The proposed non asset specific cost apportionment process is aimed to provide as transparent a mechanism as possible to recover those general maintenance overheads not covered by site specific asset maintenance costs, such as maintenance planning & management activities and would operate as follows:

- (i) collate forecast of total general site overheads for Year N
- (ii) apportion costs between infrastructure and connection assets on the basis of the ratio of total connection GAV to total system GAV
- (iii) allocate connection asset costs on the basis of the ratio of connection site GAV to total connection GAV

Site Specific Maintenance Charging Process

In summary, the proposed new methodology for Site Specific Maintenance charges would be:

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- (i) in Autumn/Winter of Year N-1 set indicative Site Specific Maintenance charge for Year N for all customers as flat % of GAV (c. 0.5% for 2004/05)
 - (ii) recover the indicative maintenance charge monthly during Year N
 - (iii) in July of Year N+1 National Grid would reconcile maintenance charges for each site and issue reimbursement or further payment requests as appropriate within the current October invoice process
 - (iv) following the reconciliation, users would effectively have been charged for the outturn Site Specific Maintenance costs incurred by National Grid relating to their site as undertaken in Year N.

This proposal could result in more volatile charges as the volume of work at a site can vary significantly year on year. However, the materiality of this volatility is very low in the context of other transmission charges. Furthermore most users will benefit from a portfolio effect where the volatility of charges at different sites will offset each other around the average to effectively dampen the overall volatility seen by the user.

National Grid believes at this time that the proposal outlined above would be more cost reflective than the current methodology, would better facilitate competition and therefore better meet the Relevant Objectives.

5. User Responses to National Grid's July 2003 Consultation

This section includes a synopsis of user views and issues raised regarding the proposed modification received following National Grid's July 2003 Initial Charging Methodologies Consultation. National Grid's response to each of the points raised by users is provided under the two main areas to indicate why National Grid subsequently determined it was still appropriate to raise them as part of this modification.

5.1 Users Responses to Proposed Change to Connection Boundary

Of 26 responses received from users, 17 respondents supported the proposed change to connection boundary and 9 were against.

5.1.1 Support

Respondents offered support for the proposed connection boundary move on a number of grounds.

Several respondents maintained that a decrease in connection charges would increase competition in supply and break down barriers to entry. Two other users agreed that the proposals would encourage competition by removing unmanageable risk currently faced by users at shared sites, for example with new connection, disconnection and shared assets. Other users noted that the proposals would improve cost reflectivity.

One respondent highlighted the fact that the proposals would allow users to avoid unexpected volatility in connection charges when a party leaves a shared connection site. The proposals were described by one respondent as being more transparent and simplistic, while another added that the proposals would improve clarity of the methodology.

National Grid concurs with these views and believes they highlight the strong case for this proposed modification to the Statement of the Connection Charging Methodology.

5.1.2 Opposing Views

A synopsis of the main opposing views arising from users' responses to the July 2003 Initial Consultation is provided below together with National Grid's comments.

Plugs methodology does not reflect true costs of connection

A number of respondents claimed that the proposed Plugs methodology would not reflect the cost of connection. One of the respondents clarified this issue by stating that the proposal would prove more cost reflective for connectees located near to existing transmission assets, but this reflectivity would be lost for remote connectees who would not incur any connection charges, thereby losing any locational signals. This would result in existing users subsidising new connectees on the fringe of the system, who would not have to consider the location of their connection and would increase overall transmission charges.

National Grid believes that locational signals will appropriately transfer into TNUoS charges. For example, a new generator looking to connect to the network via a long or expensive generation spur will not see a large related connection charge. However under the TNUoS charging methodology it will see a large difference in its nodal cost from its nearest neighbouring nodes. Given the zoning criteria applied in the TNUoS charging methodology this will lead to it either being included within a redefined small expensive generation zone or quite possibly in its own zone, thus ensuring appropriate cost signals are provided. This locational TNUoS signal is readily apparent to new connectees from the TNUoS charging methodology and/or if requested as part of any Use of System Agreement application.

Generation Only Spurs proposal represents a cross subsidy

Although the majority of respondents who expressed an opinion supported the connection boundary move, concerns were raised over the movement of Generation Only Spurs (GOS) into infrastructure. A number of users were of the opinion that this movement of costs would transfer risk from one individual generator onto the whole market. In addition, some parties expressed the view that the GOS proposals would reduce locational signals to new and existing parties.

This point was raised early in the Charging Review and was addressed in the July 2003 consultation and is also tackled above. To reiterate, National Grid does not believe the proposals discriminate between users or classes of users. National Grid would continue to maintain the overall 75%/25% split of connection and Transmission Network Use of System Charges, therefore there would be no cross-subsidisation between generation and demand. There is no material transfer of risk involved as new connectees will provide the same overall security provisions to

National Grid as currently and existing GOS costs would amount to less than 1.5% of revised TNUoS charges.

Connection boundary change will result in economically inefficient decisions

One respondent rejected the connection boundary change proposal on the grounds that it would make decisions on new connections, asset renewal and terminations economically inefficient and would result in an increase in costs to all users. Users' decisions would become less efficient under the proposals as they would have no incentive to minimise their connection costs by choosing the most efficient connection configuration and location.

Again this point was raised earlier in the Charging Review and was addressed in the July 2003 consultation and is also tackled above. To reiterate, National Grid does not believe that by simply changing the charging connection/infrastructure boundary, that the asset replacement process and any other system developments would become economically inefficient for a number of reasons:

- National Grid has a licence obligation to maintain and develop an efficient and economic transmission system. This obligation does not allow National Grid to make different investment decisions just because of the movement in the charging boundary*
- Capital investment decisions are driven by the requirement to maintain the transmission system to meet the appropriate licence standards. Unless there is a change to these standards, there can be no change to the level of investment required to maintain compliance*
- In addition to the licence objective noted above, National Grid is also financially incentivised to develop an economic and efficient transmission system. National Grid's capital expenditure is fixed by the regulatory Price Control and therefore, if there were any increases in investment costs, there would be no corresponding automatic increase in revenue*

National Grid believes that there would not and indeed could not be any changes to investment decisions as a result of the proposed boundary change. National Grid does consider however, that there would be scope for some efficiency gains in the process which delivers an asset replacement decision, as a consequence of the boundary change. Under the current arrangements at shared sites it is necessary to reach agreement with all users before work can commence. This process is resource intensive for all parties, and can be complicated further by the different and potentially incompatible commercial drivers of each party. Also, short term commercial drivers of users may conflict with National Grid's long term considerations which are more compatible with efficient network investment.

Irrespective of the location of the connection/infrastructure boundary National Grid will continue to involve the users in the decision making process where there is interaction with the user's connection. This interface would inform National Grid's investment decisions as they do at present, however there would be no requirement to formally reach agreement with the users for shared assets. There are therefore opportunities to make the process more efficient without affecting the end product.

The change in connection boundary would lead to discrimination

Plugs proposals will lead to discrimination between connected parties as those with older assets will end up cross subsidising those with newer assets through unrecovered costs being pooled in infrastructure.

National Grid believes this is not a valid argument when viewed from a long term perspective. Clearly different connection assets are at varying points of their asset life and the relative size of their charges will reflect this at any point in time. However, over the longer term what might be defined as older assets now will become new assets later as they are replaced leading to a saw tooth charging effect. Thus those who argue they are cross-subsidising others now will, using their argument, be cross-subsidised by these same others later. Hence National Grid believes that from a long term efficient perspective this argument is not valid.

Removal of Termination charges will not drive efficient transmission development

One respondent identified a potential issue arising from the consequential removal of Type B termination charges, who claimed that existing participants will be exposed to additional increases in charging to cover developments where a new entrant fails to materialise, unless financial obligations are placed on new entrants.

The issue of implications for security cover requirements was raised in connection with the removal of Type B termination charges and one respondent noted that this issue should be progressed in parallel under the CUSC governance process.

This argument is not valid, since, as highlighted above, new connectees will continue to provide the same level of overall security to National Grid for assets relating to their connection and thus there is no transfer of risk or cost to other users.

Disparity between distribution and transmission connection policies

One respondent expressed concern over a perceived disparity between the connection policies for Distribution and Transmission, which it stated was illustrated at a recent industry seminar where some distribution connectees expressed a preference for a deep connection policy.

National Grid recognises that there are differences in connection policy at present for transmission and distribution. However, National Grid also notes the ongoing review process being conducted by Ofgem at the distribution level is seeking to introduce a more shallow connection policy akin to the approach for transmission. Hence National Grid believes any disparity will be reduced over time as distribution adopts such an (shallow) approach to treatment of connection.

Restriction of competition in the provision and maintenance of assets

A number of respondents remarked that a shallow connection policy would reduce the number of assets that could be installed and maintained by a third party, thereby restricting competition in the provision and maintenance of assets. This would be contrary to relevant objective C7B11(b).

This point was also raised earlier in the Charging Review and was addressed in the July 2003 consultation and is also tackled above.

To reiterate, under the existing arrangements, maintenance contestability is limited to assets which do not impact on the operation of the wider transmission system. Users are therefore not permitted to maintain National Grid's busbars or mesh corners with their associated switchgear and equipment, or the outgoing feeder bays. The vast majority of the assets which move into infrastructure, are such assets for which the maintenance is not contestable. These substation assets are currently non-contestable within the connection boundary, and would remain non-contestable under the proposed shallower connection/infrastructure boundary. There are a relatively small number of shared transformer circuits and associated lower voltage connections, which would no longer be contestable due to the assets moving into infrastructure.

Under the current methodology a user's maintenance charge is made up of charges for contestable and non-contestable assets. It is therefore not clear to the user what is and is not contestable and what is the associated cost.

National Grid believes that by adopting a revised connection boundary containing those assets for which the maintenance activity is contestable, it would become possible to provide a clear and transparent indication to users and place them in a stronger position to consider undertaking the maintenance activity themselves.

Similar to the discussion above on economic efficiency, National Grid does not believe that competition in the provision of the maintenance activity provides any greater incentive to reduce costs than is currently provided by the regulation of operational expenditure within the Price Control.

Furthermore, whether or not the maintenance of an asset is contestable has no bearing on the maintenance undertaken and planned for the asset. National Grid's maintenance policy does not differentiate between contestable and non-contestable or between connection and infrastructure.

Proposals represent a reduction in competition in electricity supply

It was suggested that the proposals would not better meet the relevant objective of increasing competition in electricity supply and would in fact represent a reduction in competition. The increase in TNUoS would have a detrimental impact on suppliers who offer products based round Triads and load management.

National Grid does not believe this to be the case. All suppliers will see the same cost for any given area (and thus any cost increase). Hence there should be no relatively detrimental impact on any individual supplier with respect to other suppliers and thus existing competitive positions will be unaffected. Indeed it could be argued that any increase in demand charges will increase the market for such products and provide additional opportunities for suppliers.

Shared sites receive greater benefit than sole user sites

One respondent noted that under the proposed boundary move, sole user sites would not benefit from reduced charges as much as shared sites. To balance this situation and reduce possible claims of discrimination, a suggestion was made that National Grid should allow users at sole user sites to identify which of their assets

they wished to deem potentially shareable, thus making it possible for these assets to move into infrastructure. This would offer the additional benefit of removing termination charges to sole users.

It is not true to simply say all shared site users benefit more than sole user sites from the proposed connection boundary change. The change is made to ensure a simple transparent shallow boundary where the connection assets are clearly those relating (and will always relate) to an individual user and the impact on connection charges will vary from site to site dependent on the individual connection circumstances. It is certainly possible that a sole user site could see a greater benefit than a shared user site. Furthermore, as the boundary change has been defined by National Grid to clearly allocate only those connection assets to a user which are required for them as an individual user, there is no scope for any of those assets to be deemed by National Grid, or anyone else, as shareable.

Reduction in Distribution Network Operator (DNO) cost pass through

Although some respondents recognised that this is not strictly an issue for National Grid, seven parties raised concerns that there did not appear to be a mechanism by which DNOs would be required to pass on any cost savings to their customers through DUoS charges.

National Grid recognises the concerns expressed by users but notes that such issues are outside its vires for considering modifications to the transmission charging methodologies and would anticipate that DNOs would seek to pass through benefits as appropriate. Ofgem will be aware of these potential issues and users are advised to correspond with both them and the relevant DNO directly as they feel appropriate.

5.2 Users' Responses to Proposed Change to Site Specific Maintenance

Of those users who provided responses on this proposed modification, 6 respondents supported the proposed change to the method of calculating the Site Specific Maintenance charge and 3 were against.

5.2.1 Support

Six respondents offered support for the Site Specific Maintenance cost pass through proposal, expressing agreement with National Grid that the proposal would result in more cost reflective charges. National Grid welcomes this reinforcement of its view that the proposal better meets its relevant Licence objective C7A 5(b) to provide cost reflective charges.

Options for Reconciliation of charges

Of the 6 that supported the proposed change to Site Specific Maintenance costs, 3 agreed with National Grid's preference that reconciliation should be undertaken close to the year in which the costs were incurred. The remaining 3 users did not express a preference. A further 3 users who did not express a view on National Grid's proposed change to Site Specific Maintenance costs nevertheless commented that they would prefer a longer term reconciliation option. The rationale presented by respondents for longer term reconciliation was that it would create a more predictable and manageable charge.

National Grid believes that a one-off reconciliation process undertaken as close as possible to the year in which the costs are incurred is the most efficient option, a views that was supported by users' responses. National Grid therefore proposes a one-off reconciliation in July of Year N+1 as part of this modification proposal.

5.2.2 Opposing Views

A synopsis of the main opposing views arising from users' responses to the July 2003 Initial Consultation is provided below together with National Grid comments.

Transparency of requirement for SSM works & liability for charges

One user recommended that National Grid should implement a process to encourage transparency of the need for SSM, with the introduction of a CAP012 style consultation and agreement process to be carried out before works are undertaken. The user felt that this process would improve the prospects for contestable maintenance, although it was noted that implementation of the "Plugs" methodology would reduce the number of assets where contestable maintenance could be carried out. Another respondent suggested that certain maintenance charges should be borne by National Grid rather than the user and that to try and separate out these elements from the overall charges would be a time consuming and difficult process.

National Grid views the adoption of a CAP012 style process as highly bureaucratic, inefficient and fundamentally impractical for charges that are fundamentally smaller than those addressed by CAP012. It would also have implications on HSE grounds which would be unacceptable for National Grid, given National Grid's ownership and responsibility for the assets. The proposal for changing the method of calculating Site Specific Maintenance charges put forward will not involve a time consuming or difficult process for National Grid to operate.

Volatility of SSM charges

Respondents raised concerns over the potential year on year volatility of SSM charges that would be introduced by the cost pass through proposals.

National Grid accepts that there will be an increase in volatility of SSM charges. This is inevitable in providing more cost reflective charges based on actual works done. However, it is hoped that for most users this volatility will be not significantly higher due to the portfolio effect, specifically that some users' sites may see high charges but others will see low charges in any given year and thus combined together the overall fluctuation will be reduced. In any event, the anticipated level of volatility is not believed to be material. Hence National Grid believes the benefits of the proposal in terms of cost reflectivity and contestability, in the context of relevant Licence objectives, far outweighs the minor detraction of increased charge volatility.

Lack of clarity over contestability

A concern was raised over the lack of clarity as to how a customer could arrange to maintain assets owned by National Grid, who would retain the responsibility for specifying when and how the maintenance should be undertaken. The respondent who raised the matter suggested that, due to the perceived problems, a more

sensible alternative would be to include the maintenance charges in the standard overhead charge in the connection agreement.

As a result of modification proposal CCM-M-07 “Change to Connection Boundary...” there will actually be increased clarity of contestability as the proposed new connection boundary will be fully aligned with contestable assets. If CCM-M-07 were not to be ratified, clarity of contestability will be no less than currently. The alternative suggestion would not be compatible with National Grid’s relevant Licence condition C7A 5(b) to provide cost-reflective charging.

Uncertainty over indicative charges

Two respondents felt unable to offer support for the SSM proposals as they could not decide whether the proposals were appropriate without first receiving further analysis on the likely charges they would incur. However, the respondents did note certain features they would look for in a maintenance service would be a good service offering value for money, stability and competitiveness with other service providers.

National Grid put forward the proposed change to calculating Site Specific Maintenance charges to better meet its relevant Licence objectives and sought responses based on these and the principles behind the proposed change. Whilst it understands these users’ views, the level of individual users’ charges is not the appropriate basis for judging the merit of the proposed change.

National Grid believes it always seeks to provide good service in line with its Licence requirements and is incentivised to offer best value to customers. However, the proposed change to calculating Site Specific Maintenance charges will contribute to greater clarity of contestability and will thus provide users with further opportunity to undertake self-maintenance where they believe they are able to do better.

SSM proposals should be split

One respondent considered that the SSM proposals reflected two changes in principle, one that was consequential to the proposed connection boundary move and the second a change to the method of calculating and reconciling the annual maintenance costs. The respondent felt that the consequential element of the change should be included within the connection boundary modification proposal, whereas the second element of the proposal should be deferred as it is unrelated to the main connection boundary changes.

National Grid believes this modification is already suitably defined and addresses the latter point, such that it appropriately combines with CCM-M-07 “Change to Connection Boundary...”.

6. Proposed Modification

6.1 Description of proposed modification

In line with the implementation of “Plugs” and in conjunction with the associated CAP052 proposal “Removal of Land Charges”, it is proposed to modify the

Connection Charging Methodology to reflect the consequent change in definition of connection boundary, change in treatment of land charges, change in treatment of termination charges. Also, in line with the implementation of the revised Site Specific Maintenance charge calculation and in conjunction with the associated CAP053 proposal "Revision of Site Specific Maintenance Charges" it is proposed to modify the Connection Charging Methodology to reflect this change in calculation.

6.2 Justification for proposed modification

Change to Connection Boundary

To better meet the Relevant Objective in Licence Condition C7A 5(a) of ensuring National Grid facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) to facilitate competition in the sale, distribution and purchase of electricity.

The proposed change to the connection boundary would result in assets and the associated revenue moving from connection into infrastructure, and therefore recovered through Transmission Network Use of System tariffs. This would require an adjustment to National Grid's allowed revenue via an amendment to the Transmission Licence.

National Grid believes that such a Licence change is required to ensure the proposals better meet the Relevant Objective in Licence Condition C7A 5(b) to ensure National Grid levies charges which reflect, as far as is reasonably practicable, the costs incurred by National Grid in its transmission business.

National Grid therefore considers this change to the methodology to be conditional upon an appropriate change to the Transmission Licence being approved before this modification is implemented.

Change to Site Specific Maintenance Charge

To better meet the Relevant Objectives in Licence Conditions C7A 5(b) and C7B 11(b), namely to ensure National Grid levies charges which reflect, as far as reasonably practicable, the costs it incurs in its Transmission Business and facilitates competition in the carrying out of works for connection to National Grid's Transmission system.

National Grid believes this modification is non-discriminatory, with respect to any specific user or class of users in accordance with Licence Condition C7C.

6.3 Proposed Changes to the Connection Charging Methodology Statement

To accommodate this modification, an illustration of the impact on the Statement of the Connection Charging Methodology is provided in a separate Appendices document.

Each Appendix within this document refers to an affected Chapter/Appendix of the Connection Methodology Statement. The majority of changes are in order to adopt

the change in connection boundary, the removal of land charges and the elimination of termination charges imposed by implementation of “Plugs”, as outlined in Section 4, where the specific changes are;

- (i) National Grid proposes to redefine the connection boundary so that all assets which are shared or which could be shared are moved from connection into infrastructure. Sharing of transmission assets would therefore only occur within infrastructure and not connection. This results in substations (and associated site infrastructure and land), generation only spurs, and shared transformer circuits moving into infrastructure.
- (ii) National Grid proposes to move all land charges into infrastructure. This would also remove the different treatment of land charges between pre-vesting and post vesting connections described previously.
- (iii) National Grid proposes to update the Connection Charging Methodology to reflect the fact that Type B termination charges would no longer be required.

The proposed change to the calculation of Site Specific Maintenance charges solely affects Paragraphs 2.15 – 2.20 of Chapter 2. Specific changes are:

- (i) National Grid proposes to charge based on cost pass through of actual maintenance costs incurred in that relevant year
- (ii) National Grid proposes to determine the indicative Site Specific Maintenance charge based on a flat percentage of the GAV
- (iii) National Grid proposes to further apportion non-asset specific maintenance costs (i.e. overheads)
- (iv) National Grid proposes to reconcile the indicative charges to outturn site specific costs via a one-off reconciliation charge in July of year N+1.

National Grid welcomes comments from users on the illustrative drafting of the Statement of the Connection Charging Methodology to accommodate this Modification Proposal as outlined in the separate Appendices document.

6.4 Suggested alternatives

None.

6.5 Implementation date

1 April 2004.

6.6 Indicative Impact on Connection Charges

6.6.1 Impact of Revised Connection Boundary

Clearly the change of connection boundary proposed under “Plugs” will impact on users’ connection charges. Specifically the shallower definition of connection boundary introduced by “Plugs”, the associated removal of land charges from connection and the consequent elimination of Type B termination charges will impact on Connection Charges of Users at each connection site.

The indicative impact on Connection Charges has been assessed for all Users but due to the bilateral nature of connection agreements, individual Users will only be provided with the relevant impact on their individual Connection Charges.

These indicative Connection Charges have already been provided to those users who have requested them. National Grid is happy to provide further relevant supporting information as requested by users relating to their individual charges.

Users wishing to receive their indicative charges or additional supporting information, are asked to contact National Grid formally in writing including their contact details, and an email address so that the indicative charges can be sent electronically. This will ensure confidentiality is maintained and that the relevant information is sent directly to the most appropriate individual.

6.6.2 Impact of Revised Site Specific Maintenance Charge

As noted previously, the proposal could result in more volatile charges as the volume of work at a site will vary year on year so the impact on Connection Charges of Users at each connection site will vary.

However, the initial Site Specific Maintenance charges for 2004/05 are expected to be circa 0.5% of GAV.

Furthermore, as also noted previously, for the majority of users the volatility/variation from the initial 0.5% figure should not be overly high, due to the portfolio effect dampening differences at individual sites. Thus final “outturn” charges for most users would be expected to be reasonably close to the initial average charge levied.

6.7 Impact on TNUoS Charges

Clearly the implementation of a change in connection boundary will, ceteris paribus impact on TNUoS charges.

This will primarily arise from the transfer of related revenue from connection into infrastructure such that TNUoS revenue recovery requirements will increase. The value of assets being transferred from connection into infrastructure is estimated at c.£2.5bn.

There will also be an impact on the G/D split within TNUoS charging due to requirement to maintain an overall 25:75 split of revenue recovery from connection and infrastructure charges. This is due to the composition of the transferring assets being different from the 27:73 split currently used within TNUoS charge setting.

Finally, those assets which would be newly deemed as infrastructure would be included within the TNUoS transport model. This would be via the route lengths of the transport model network needed to derive the underlying nodal marginal costs that are used as the basis of deriving TNUoS tariffs.

6.8 Legacy Issues arising from Connection Boundary Change

Clearly the implementation of a change in connection boundary will present some legacy issues in relation to those connection customers who have adopted less standard charging options for connection.

National Grid proposes to address any such legacy issues by following a set of principles that will be established if and when this modification is approved.

Given the individual and confidential nature of these legacy issues, National Grid will conduct the appropriate discussions with affected users on a bilateral basis. The aim is to ensure any legacy issues are resolved for implementation on 1 April 2004.

It is National Grid's intention to contact all individual affected users in the next couple of months, however National Grid is happy to address specific issues raised by users in advance on a bilateral basis, if and as requested.

6.9 Impacts on Other Industry Documents

Amendments will need to be made to the CUSC to reflect the removal of land charges from connection and reconciliation of Site Specific Maintenance charges.

7. Responses to this Consultation

Comments and views are invited on all the issues raised in this consultation document. In order that your comments and views are considered as part of National Grid's report to the Authority, responses must be received by close of business on **10 October 2003**.

If you wish to provide comments on this proposed modification, responses are welcome via email to: Alex.Thomason@ngtuk.com.

Alternatively, users can choose to provide their comments in writing, addressed to:

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CV34 6DA

If you have further queries, please do not hesitate to contact Alex on 01926 656379.