National Grid

CONCLUSIONS REPORT

Modification Proposal to the Connection Charging Methodology

CCM-M-05

Implementation of Changes Required for CAP043 "Transmission Access – Entry Access Product Definition"

23 December 2002

Table of Contents

1. INTRODUCTION

A consultation document for modification proposal CCM-M-05 was issued on 11 November 2002. The document set out for consultation National Grid's proposed modification to the Connection Charging Methodology to take account of the CUSC Amendment CAP043: "Transmission Access – Entry Access Product Definition".

The modification proposal suggested some revised text for the Statement of the Connection Charging Methodology which would reflect the change to the charging methodology. The proposed revised text can be found in Appendix 2 to this document. Comments on the modification proposal were invited by 9 December 2002.

2. TERMS OF THE ORIGINAL PROPOSED MODIFICATION

Description of proposed modification to the Connection Charging Methodology

As part of the ongoing industry consideration of Transmission Access arrangements, a Transmission Access Standing Group (TASG) was established by the CUSC Amendments Panel to discuss these issues and their implications for the CUSC and potential impact on other industry documents. As a result of discussions at the TASG, National Grid tabled a CUSC Amendment Proposal (CAP043) in September 2002 to introduce amendments to the CUSC and other relevant industry documents with regard to Transmission Access arrangements for the entry side of the market, with effect from 1 April 2003.

This proposal states the required changes to Chapter 10 of the Statement of the Connection Charging Methodology (see Appendix 1). The CAP043 changes introduce a new capacity definition for generation which it is proposed to use for the connection asset allocation procedure.

Explanation of the issue

The change to the Connection Charging Methodology is required to take into account the new definition for "Connection Entry Capacity" (CEC), proposed by CAP043. Currently, the allocation rules for connection assets use a Generator's capacity to allocate the connection assets to that User at a connection site. Under the new proposals, National Grid would use a Generator's CEC for allocation purposes and this needs to be made explicit in the Connection Charging Methodology.

Justification for proposed modification

To better meet the Relevant Objective in Licence Condition C7A 5(c) of ensuring National Grid properly takes account of the developments in its Transmission Business.

Suggested alternatives

None.

Implementation date

1 April 2003.

Proposed changes to the Statement of the Connection Charging Methodology

It is proposed that Chapter 10 of the Statement of the Connection Charging Methodology is modified as indicated in Appendix 1 in order to use a Generator's Connection Entry Capacity for connection asset allocation purposes.

Impacts on existing Connection charges

If the Connection Entry Capacity for a generator differs from the capacity currently used to calculate the generator's allocations, there may be an impact on the allocation of the connection assets at the connection site, and therefore an impact

on Connection Charges of the Users at the connection site.

The impact on Connection Charges will be assessed as part of the process of establishing the Connection Entry Capacity.

Impacts on other Industry Documents

There is no impact on other industry documents.

2. RESPONSES TO THE MODIFICATION PROPOSAL

Comments and views were invited on all the issues raised in the Modification Proposal up to 9 December 2002. National Grid received nine responses, which are included in Appendix 1.

Five of the responses supported the proposed modification and four were against. Four of the five respondents that supported the charging methodology modification did not support the CAP043 CUSC Amendment Proposal upon which the modification is based. However, the respondents stated that they would be prepared to support the consequential charging modification were CAP043 to be implemented.

Of the four responses that opposed the modification, one did so on the basis that the change to the connection charging methodology was only required due to the other modification proposals which sought to change the entry charging methodology, which they also opposed. Some other specific issues were raised by respondents opposing the modification and are considered below.

Timing of Transmission Access Arrangements

One respondent was not prepared to support the modification proposal on the basis that more time should be allocated to the development of the proposals. The respondent also expressed a view that the timetable for the introduction of any amendment to the Transmission Access arrangements should be reconsidered in light of potential changes that might arise due to the BETTA (British Electricity Trading and Transmission Arrangements) consultation process.

Applicability and Ambiguity of Connection Entry Capacity Term

Two of the responses that opposed the modification proposal raised an issue with the usage of the new term to cover both capacities that relate to a station and those relating to individual generating units.

One of the respondents stated that there could be potential confusion over the use of the new term and they would therefore only support the use of the CEC term for the station. The respondent also expressed the view that the existing terminology should be retained except where it is used on a station basis.

The issue of ambiguity was raised in another response and was perceived to arise from the fact that the new CEC term would cover both capacities that relate to a connection site and those that relate to individual generating units. An example was given of a range power station where it was suggested that the station CEC might often be less than the sum of the individual Unit CECs.

Cost Reflectivity and Discrimination

Another view expressed was that the usage of the new term for both the station and the individual generating units would bring about a significant change in charges to certain Users at shared connection sites. The respondent felt that this change could be perceived as discriminatory due to a lack of change in the costs that the affected Users would be imposing on the system. The new charges could then be deemed as being less cost reflective as the arrangement of the connection site itself would not have changed.

Inclusion of Local Demand in Connection Entry Capacity definition

Another issue raised by one of the respondents was the exclusion of local demand from the definition of CEC. The respondent emphasised that previous Ofgem determinations have established that local demand can impact on the number of MTIs needed to meet the Planning Standard and thus the allocation of shared assets and recognition of generator spurs.

Typographical Error in Proposed Text

The Consultation Document issued on 11 November 2002 contained the proposed text for the Statement of the Connection Charging Methodology, incorporating required changes. During the consultation process, a typographical error was noted in paragraphs 10.26 and 10.27 of the proposed new text. The paragraphs contained a reference directing the reader back to paragraph 10.24 which should have directed the reader to paragraph 10.25.

3. CHANGES TO THE PROPOSAL IN LIGHT OF REPRESENTATIONS MADE

A number of the respondents stated that they are prepared to support this proposal if the current CAP043 CUSC amendment is approved. Such views are entirely consistent with the conditional nature of this modification proposal which is reliant on the timely approval of the CAP043 CUSC amendment.

However, one respondent did not support the proposal on the grounds of their opposition to the CAP043 CUSC amendment. Such concerns regarding the CAP043 CUSC amendment itself are more appropriately addressed as part of that process and will not be discussed in any detail in this report.

One respondent could not support the proposal on the grounds that they believed more time should be allowed to consider and assess the implications of CAP043, and also therefore to assess any related changes to the Charging Methodologies. As mentioned above, any issues associated with the CAP043 cannot be addressed in this report. Furthermore, it is National Grid's view that the timing and duration of consultation for this modification to the Charging Methodology is appropriate.

The respondent also suggested the implementation timetable for both CAP043 and this proposal should be reconsidered in light of the developments in BETTA and Transmission Access. Under the Transmission Licence, National Grid is required to keep the Charging Methodologies in England and Wales under constant review and to bring forward modifications which better achieve the relevant Licence objectives. National Grid is discharging this obligation by making this proposal to change the Connection Charging Methodology and any interaction with Transmission Access or BETTA are more appropriately addressed as part of those processes, and cannot be discussed in this report.

One respondent expressed serious concerns due to the possible impact on Connection Charges of this proposal. The respondent felt that any change to Connection Charges as a direct result of this modification would appear to be discriminatory as such a change could not be attributed to any change in costs. The respondent was of the view that if National Grid was minded to progress with this change for "administrative ease" then National Grid should give a clear statement that the proposals will not cause a variation in charges.

National Grid would not expect any Connection Charges to change as a direct result of this proposal, as the capacity values currently used to allocate connection assets should be comparable with the CEC values.

The capacity value is primarily used in the allocation of Main Transmission Incomer (MTI) bays. The generation capacity is also used to allocate Supergrid Transformers where the generation is connected to National Grid's network at 132kV or below. The final use in connection charging of generation capacity is for the allocation of certain mesh substation equipment.

For both the MTI bays and the mesh equipment there is a single threshold of 1000MW at 275kV and 1320MW at 400kV, at which point the allocations may change. Where Supergrid Transformers are allocated to lower voltage connected generation, similarly coarse thresholds exist, based on the ratings of the transformers.

These wide bands within which the generation capacity value can vary without having any impact on allocations further reduces the likelihood of this proposal having any affect on Connection Charges.

It is therefore extremely unlikely that the implementation of this proposal will result in a change in Connection Charges. However, theoretically, if a CEC is on one side of the appropriate allocation threshold as discussed above, when compared with the current capacity value used for allocation purposes, there would be a requirement to revise the Connection Charges accordingly.

It is therefore not possible for National Grid to give any assurances that this proposal will not in itself cause either an increase or decrease in Connection Charges. However, National Grid will ensure that in the unlikely event that a proposed CEC value results in a change in Connection Charges, the effect of this change will form part of the discussions to agree the CEC figure with the Generator.

Two respondents noted the possible scope for confusion over the use of the CEC term for asset allocation purposes, since there is both a total connection site CEC and an individual generating unit CEC. One of these respondents did not support the individual unit CEC in their responses to the CAP043 consultation and therefore could only support this proposal if the connection site CEC value is used.

The CEC value, which will be used for asset allocation purposes, should reflect the capacity connected to the substation at which the connection assets are being allocated. This would normally be the connection site CEC, however it is feasible for a single Power Station to have individual generating units connected to different substations e.g. one unit to a 400kV substation at a connection site and a second unit to a 275kV substation at the same connection site.

In such exceptional cases only the generating unit CEC term will be used at each voltage level. National Grid has modified this proposal to clarify the use of the connection site CEC with the generating unit CEC to be used when appropriate and by exception. These changes are reflected in new paragraphs 10.15 and 10.16 of the amended text attached in Appendix 2.

One respondent stated that the connection capacity determines the number of Main Transmission Incomer bays needed to meet the Planning Standards and thus the number of MTIs required for allocation purposes. It was also stated that local

demand can be taken into account in determining the number of MTIs required to meet the Planning Standards.

The number of MTIs required for allocation purposes is determined by reference to the appropriate tables in the Statement of the Connection Charging Methodology and not by the application of the Planning Standards. It is assumed that the connection site CEC will define the maximum level of export that the Power Station will make at that site, hence could allow for local demand if that is assumed to be taken into account. For example, the sum of generating unit CECs could exceed the connection site CEC. The connection site CEC would limit the export of the Power Station from the site but not how it produces that export from its generating units.

In light of the responses received, National Grid has amended the typographical error in paragraphs 10.26 and 10.27 of the original proposed text. Due to the addition of new paragraph 10.15, the amended text now appears in the renumbered paragraphs 10.27 and 10.28, attached in Appendix 2 to this document.

4. HOW THE PROPOSED MODIFICATIONS BETTER MEET THE RELEVANT OBJECTIVES

The proposed modifications would enable the charging methodologies to better meet the relevant objectives as set out in the transmission licence C7A 5(c):

(c) that, so far as is consistent with sub-paragraphs (a) and (b), the use of system charging methodology, as far as is reasonably practicable, properly takes account of the developments in the licensee's transmission business.

The modification would do this by implementing changes to Chapter 10 of the Connection Charging Methodology to reflect the proposals put forward in CUSC Amendment Proposal CAP043.

5. TIMETABLE FOR IMPLEMENTATION

The consultation document proposed an implementation date of 1 April 2003, dependent upon CUSC Amendment Proposal CAP043 being approved and implemented for April 2003.

National Grid is awaiting approval from the Authority for the implementation of CAP043 and has no reason to change the date of implementation for the charging methodology modification proposal. Therefore National Grid proposes that the connection charging methodology and the Statement of the Connection Charging Methodology be modified from **1 April 2003**.

APPENDIX 1 – RESPONSES TO MODIFICATION PROPOSAL

Response from British Energy

"Implementation of Changes Required for CAP043 'Transmission Access – Entry Access Product Definition'

Further to the above consultation document issued in respect of the above proposed modification, British Energy advise that we SUPPORT the proposal as presented.

In supporting this change to the Connection Charging Methodology (CCM), NGC should however note that this support is limited to accepting that this modification is the logical consequential modification required to the CCM should CAP043, which we do NOT support, be approved by the Authority for implementation from 1st April 2003. (Specific comments in relation to the CAP043 CUSC Amendment have been provided to NGC in our 5th December response).

Response from British Gas Trading Ltd

British Gas Trading (BGT) welcomes the opportunity to comment on the above Connection Charging Methodology modification proposals.

We would like to make the following comments:

CCM-M-05 - Implementation of Changed Required for CAP043 "Transmission Access - Entry Access Product Definition".

As with the Use of System Charging methodology Proposal UoSCM-M-06, we do not support this proposal at this time. Although, if the CAP043 CUSC amendment is approved we would support the proposal in principle, we consider that the CAP043 CUSC amendment is insufficiently defined at this time.

We believe that the detailed definition of the Connection Entry Capacity (CEC) should be agreed and published before this proposal can be considered. We therefore suggest that this proposal has been raised prematurely.

Response from East Midlands Electricity Distribution plc

Thank you for the opportunity to respond to this consultation document.

East Midlands Electricity Distribution have no comments regarding the proposed modification.

Response from EdF Trading Ltd

Please find below the response from EdF Trading Ltd and EdF (Generation) on your proposed modification to the Connection Charging Methodology to implement the changes required for CAP043.

We note that this proposal is a direct consequence of the need to implement CAP043, specifically to reflect the use of the term Connection Entry Capacity in the asset allocation rules.

However we believe there is scope for confusion over the use of this term since it is being applied to both the station capacity and the individual Generating units. We responded to the CAP043 consultation to the effect that we only supported the use of the CEC term for the station, especially as this is the only use that has meaning for the Interconnectors.

We can not therefore give our support to the proposed changes that assume CEC can be applied to individual units. We believe the existing terminology should be retained except where it is used on a station basis.

Response from Gaz de France Energy Supply Solutions

You will see from our response to the CAP43 consultation that we would prefer more time to be allocated to the development of these proposals, plus reconsideration of the proposed timescale for introduction of any amendment to the Transmission Access arrangements due to the proposed introduction of GB wide arrangements 'BETTA' facilitating the roll out of NETA arrangements into Scotland and introduction of GB wide Transmission and System Operation roles. This view would apply to any current or proposed modification of the Connection Charging Methodology required to support such amendments.

Response from Innogy (on behalf of Innogy, Innogy Cogen Ltd, Innogy Cogen Trading Ltd, npower Ltd, npower Northern Supply Ltd, npower Yorkshire Supply Ltd, npower Northern Ltd and npower Yorkshire Ltd)

We are concerned that this proposed change to the Connection Charging Methodology will create a major disturbance in the charges for certain Users at shared connection sites that cannot be attributed to any change in the costs those Users impose on the system. To this extent the change would appear to be discriminatory.

The logic of the Left-Hand rule in allocating shared connection assets is that the connected capacity determines the number of MTIs needed to meet the Planning Standard. Once the number of MTIs is ascertained assets can be appropriately allocated and liabilities for "generator spurs" determined.

This proposal relies on the Connection Entry Capacity (CEC) as defined in the CUSC to determine the relevant capacity. However, the CUSC definition proposed under CAP043 is ambiguous since it covers both capacities that relate to a Connection Site, and those relating to individual Generating Units. For a range power station it may often be the case that the Station CEC will be less than the sum of the individual Unit CEC.

Furthermore the definition of CEC does not take any cognisance of local demand. Previous Ofgem determinations have established that local demand can impact on the number of MTIs needed to meet the Planning Standard, and thus the allocation of shared assets and recognition of generator spurs.

The proposed change to the Charging Methodology does not even start to justify why it is reasonable for some User's charges to change simply because a new (and ambiguous) definition of entry capacity is adopted. The physical arrangements for a connection site will not have changed, so the costs will not have changed. This proposal would therefore seem to make charges less cost reflective.

The justification given for the proposal is the apparent need "to take account of the developments in National Grid's Transmission business". Not by any stretch of the imagination can the introduction of a new definition of connected capacity be held to be a "development in National Grid's Transmission business".

For these reasons we believe this to be an inappropriate change to the Connection Charging Methodology, and cannot be held to accord with the Transmission Licence Objectives. It is unreasonable that changes of this nature should be promoted against the admission in section 5 of the consultation document that they may impact adversely on a User's charges. If NGC is minded to pursue this avenue for administrative ease then it should be against a clear statement that CEC will be defined in such a manner that the change of definition will not of itself cause a variation in charges.

Response from LE Group Companies

This change will be required if CAP043 is implemented in order to ensure consistency between connection charging methodology and Transmission Access developments under the CUSC. We agree that any Transmission Access arrangements will require changes to both the CUSC and Transmission Charging Methodologies. However, we believe that any such changes should be proposed in parallel before consultations have closed under either of the governance arrangements in order to give a complete picture.

We do not support the Transmission Access arrangement proposed by CAP043 and have raised our concerns on this subject in a response to the CAP043 consultation.

Response from Powergen

I am responding on behalf of Powergen to the above consultation. Although we do not believe that CAP043 should be implemented in its current form, we agree that the above changes deliver the intent of CAP043 should it be approved by the Authority.

Response from Scottish and Southern Energy plc

SSE oppose this proposal.

This revision is only required to the extent that other modifications are made as above in the entry charging methodology, which SSE are opposed to.

APPENDIX 2 – PROPOSED CHANGES TO CHAPTER 10: THE CONNECTION ASSET ALLOCATION PROCESS

General Allocation Principles

10.6 The following points are general to the allocation process and should be applied to all connection sites.

10.7 When undertaking an allocation, the connection asset requirements of each User are placed in the left-hand column of the allocation matrix and the remaining requirements emanate from there. This is the so-called left-hand rule. An example of this principle and its application can be found as **Annex 10A** of this allocation guide.

10.8 If connection assets have been installed or retained for a User's specific requirements or specialist need, then those connection assets will be allocated completely to that User. The allocation of the extra connection assets to Users in this way will take precedence over the normal allocation principles. These extra connection assets are then excluded from the normal allocation of such assets to other Users at the site.

10.9 The process starts from the Ownership Boundary on the Lower Voltage (LV) side of the substation and works up to the 400kV or 275kV feeder or Main Transmission Incomer (MTI) bays.

10.10 Banked transformers will require allocation of bus coupler/section bays in accordance with the number of High Voltage (HV) bays seen from the HV busbars.

10.11 The treatment of nominally over-equipped connection sites is described in **Annex 10B**.

10.12 The actual allocation of Bus Coupler/Section bays will depend on the individual connection arrangement and size of the generating unit.

10.13 Where connection sites are equipped with reserve bar disconnectors and cross over connections, the allocation will follow the Bus Coupler/Section bay allocation.

10.14 Allocations are not generally made to specific connection assets but are apportioned across all connection assets of the same type. Exceptions include connection assets that are designated as Generation Only Spurs, connection assets that are installed for specific use or allocations that are in line with paragraph 10.26.

10.15 For the purposes of allocating connection assets for Power Stations the total connection site Connection Entry Capacity will be used. In the exceptional circumstances where the Power Station has connections to more than one substation, the appropriate generating unit CECs will be used for allocations at each voltage level.

10.16 For the purposes of allocating connection assets Interconnectors are treated as generation connections **and the equivalent CEC values used for asset allocation purposes.**

Identification of Bussing Points

10.17 At certain sites a share of the connection assets will be apportioned to the TNUoS charging category and connection charges to the connection User(s) at the connection site will be correspondingly reduced. These connection sites are known as Bussing Points.

10.18 A Bussing Point is a substation which has connected to it more than four 400kV/275kV circuits which are not connection assets or are not considered as Generation only Spurs. Generation only Spurs are described in more detail in **Chapter 1 subsection Generation Only Spurs**. Where there is a Bussing Point, the adjustment is calculated by apportioning a share of circuit terminating switchgear and a share of all bus sections and bus couplers at the connection site to TNUoS, normally as calculated by the Left Hand Rule.

Generation Only Spurs

10.19 A Generation Only Spur including the associated terminating switchgear will be shared in equal proportions by all generators located at the connection site where the spur begins. TNUoS charges will be allocated a share of the spur circuit (including terminating switchgear). In the case of multiple spurs allocated to connection, TNUoS charges will be allocated an equal share of only the lowest cost spur circuit, including terminating switchgear. The lowest cost circuit is identified with reference to the associated Net Asset Values excluding the switchgear.

10.20 The Main Transmission Incomer (excluding those that are part of Generation Only Spur circuits), Bus Coupler and Bus Section Bays at the substation at the system end of a Generation Only Spur will be allocated to the generators sharing the Generation Only Spur circuit. The allocation of these MTI bays will be based on the ~~capacity~~ **Connection Entry Capacity** of the generation. The allocation of the Bus Coupler and Bus Section Bays will be based on the number of Generation Only Spur circuits connected.

APPENDIX 2 continued – PROPOSED CHANGES TO CHAPTER 10: THE CONNECTION ASSET ALLOCATION PROCESS

Allocation of supergrid transformers (SGTs)

Capacity Requirements

10.24 The allocation to Users of transformers where one side is run at a Transmission Voltage and the other side is run at a Distribution Voltage is usually straightforward. The requirement of each User is deemed to be that their ~~capacity~~ **Connection Entry Capacity or demand capacity** can always be met immediately with any one transformer on outage, based on nameplate ratings **of the SGTs**. This ~~capacity~~ **Connection Entry Capacity or demand capacity** requirement dictates the number of SGTs allocated.

10.25 The allocation of the connection bays, cables etc. associated with transformer circuits follows the allocation of the SGT, except in the case of banked transformers.

10.26 If a User is connected to National Grid at a 132kV or lower voltage substation (except where this substation is subject to a Rental Agreement) which is:

- within the control of National Grid,
- shared with other Users, and
- the User has a demand of less than 25 MW,

then only two SGTs and associated circuits will be assigned to the connection of that User. The SGTs and associated circuits which are so assigned to connection will be the two newest SGTs which were commissioned before 30 March 1990 or Pre-Vesting. Furthermore, if the transformers are of different ratings then the transformers with the lowest ratings are chosen. If there are fewer than two pre-Vesting transformers installed at the connection site the allocation shall be made to any pre-Vesting units and the transformer(s) installed closest to 30 March 1990. This principle is modified only in the case of banked transformers.

Banked Transformers

10.27 ~~The capacity requirements of banked transformers will follow the principles outlined above~~. **The allocation of banked transformers will follow the capacity requirements outlined above.** The allocation of the banking connections and the associated switchgear will follow the same apportionment applied to the transformers. The allocation of banking connections will also apply where transformers have been apportioned as in paragraph **10.26**. In this case the allocation of HV transformer switchgear and circuitry will only be made to those circuits associated with the transformers which have been allocated under paragraph **10.26**.

10.28 Where paragraph **10.26** would imply that two transformers within the same bank are to be allocated to the User, this will not happen. The next oldest transformer at the connection site will be allocated.

APPENDIX 2 continued – PROPOSED CHANGES TO CHAPTER 10: THE CONNECTION ASSET ALLOCATION PROCESS

Allocation of Feeders for Main Transmission Incomer (MTI) Bays

10.32 The tables below detail the allocation of the Main Transmission Incomer bays.

Generation

~~Capacity Connected~~ Connection Entry Capacity	Connection Voltage	Spur Lines and Terminating Switchgear
=1320MW	400kV	2
>1320MW	400kV	4
=1000MW	275kV	2
>1000MW	275kV	4

10.33 However, a generating station having both an Entry and an Exit Agreement connected to the same bar is apportioned on the basis of whichever requirement is the greater. In most instances, this is the Entry Agreement. Where the two requirements are the same the Entry requirement will be used.

APPENDIX 2 continued – PROPOSED CHANGES TO CHAPTER 10: THE CONNECTION ASSET ALLOCATION PROCESS

Allocation of Mesh Sub-stations

Allocation of Mesh Bays

10.38 Where generation or demand is connected to a mesh substation the User shall be allocated Mesh Bays (and Mesh Line Disconnectors) in accordance with the Connection **Entry** Capacity or the number of corners to which the User is connected (Corners Connected, as detailed below) which ever is the greater.

Connection Capacity

Generation

Connection Entry Capacity ~~connected~~	**Voltage**	**Mesh Bays**	**Mesh Line Disconnectors**
=1320MW	400kV	3	2
>1320MW	400kV	4	4
=1000MW	275kV	3	2
>1000MW	275kV	4	4

Demand

Capacity Connected	**Mesh Bays**	**Mesh Line Disconnectors**
=300MW	3	2
>300MW	4	4

Corners Connected

Number of Connected Corners	**Mesh Bays**
1	2
2	3
3	4
4	4

APPENDIX 2 continued – PROPOSED CHANGES TO CHAPTER 10: THE CONNECTION ASSET ALLOCATION PROCESS

Annex 10B: Nominally Over Equipped Connection Sites

B.1 This appendix outlines four basic examples of ways in which a connection site can be considered as having connection assets which exceed the strict, theoretical needs of the individual Users at the connection site. These can be described as:-

Historical

B.2 This is where the connection assets at the connection site were installed to meet a requirement of the Users for connection capacity which no longer exists. An example would be where a User, at one time, had a requirement for, say, 270 MW. This would allocate three 240 MVA 400/132kV transformers to the User. Due to reconfiguration of that User's network only 200 MW is now required from the connection site. The lower requirement would only allocate two transformers, but all the transformers are kept in service. The connection assets will continue to be assigned to the User's connection, and charged for as connection, until the User makes a Modification Application to reduce the historical requirement. In some cases the Modified requirement will mean that Termination Payments will have to be made on some connection assets.

Combined

B.3 This is where two or more Users share a connection site and it is the combined requirement from all Users at the connection site upon which the allocation is applied. An example is where two generators each with a ~~Installed~~ **Connection Entry** Capacity of 1000MW are connected to a connection site. Either generator, on its own, would only require two circuits. However combined they would require four.

B.4 The combined requirement of all Users at a connection site may mean that more connection assets of a particular type have to be installed than the requirement of any individual User. If this is the case, the Users' requirements are to be allocated across all connection assets of the same type. For example, if a connection site has three Users connected, Users A, B and C, with requirements for a particular type of connection asset of 1, 2 and 2 respectively as read from the appropriate table. There are 4 of these bays at the particular site. The allocation would be:

	1	2	3	4	Allocation
A[1]	$^1/_3$	-	-	-	= $^1/_3$ / 2 = 0.167 of all the bays
B[2]	$^1/_3$	$^1/_2$	-	-	= ($^1/_3$+$^1/_2$) / 2 = 0.416 of all the bays
C[2]	$^1/_3$	$^1/_2$	-	-	= ($^1/_3$ +$^1/_2$) / 2 = 0.416 of all the bays

B.5 As another example, if a connection site had four feeder connections but no individual User has a requirement for all the connection assets, the allocation is continued across all connection assets. If User 'A' has a **Connection Entry Capacity** ~~capacity~~ of 800 MW, User 'B' a ~~capacity~~ **CEC** of 1000MW and User 'C' a ~~capacity~~ **CEC** of 500 MW of generation each, then according to paragraph 10.32 they would be allocated a two circuit connection for each. The total capacity would, however, mean that four circuits are actually built. The allocation would be as follows:

	1	2	3	4	Allocation
A[2]	$^1/_3$	$^1/_3$	-	-	= ($^1/_3$ +$^1/_3$) / 2 = 0.333 of all 4 of the bays
B[2]	$^1/_3$	$^1/_3$	-	-	= ($^1/_3$ +$^1/_3$) / 2 = 0.333 of all 4 of the bays
C[2]	$^1/_3$	$^1/_3$	-	-	= ($^1/_3$+$^1/_3$) / 2 = 0.333 of all 4 of the bays

B.6 Thus all Users will pay one third of the charges for each of the four feeder bays (MTI).

Early Construction

B.7 The party causing the early construction will be allocated all those assets until the normal allocation process can be applied as follows.

B.8 An example of early construction is where connection assets are installed by National Grid for the connection of a second User ahead of the required date. If the connection assets are installed at the time of the connection of a first User, they will not be allocated to the first User until the second User is connected. An exception is where the construction of these connection assets is requested by the first User and in such cases the connection assets would form part of the Connection Agreement.

B.9 If a User has a multi-phase project, it may be necessary to install connection assets for the latter phases at the time of the first phase. These connection assets could be charged from the first phase charging date.

Connection site Specific Technical or Economic Conditions

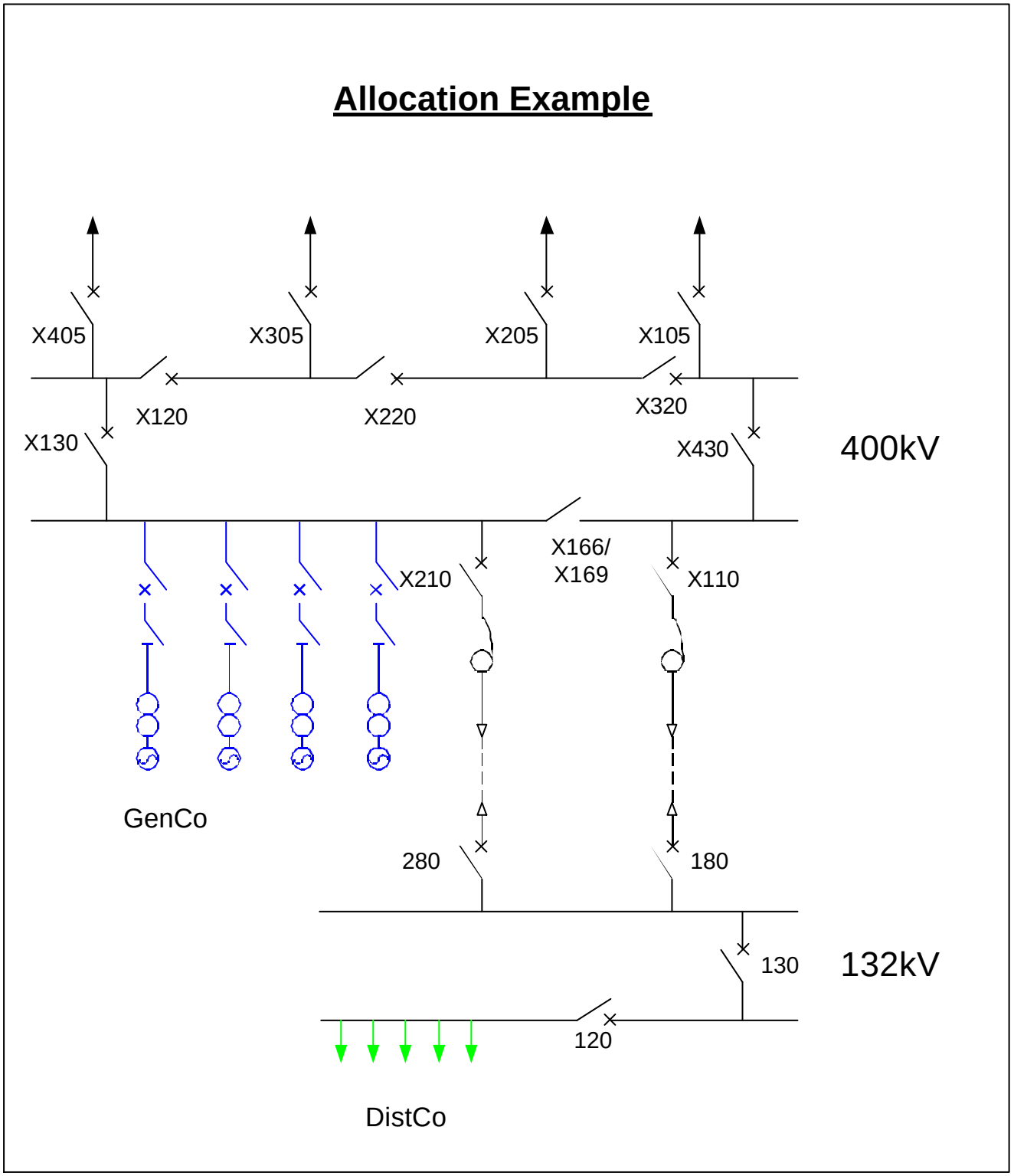
B.10 In circumstances where National Grid has identified a wider requirement for development of the transmission system, it may elect to install connection assets of greater size and capacity than the practicable minimum scheme required for a particular connection. In these circumstances, however, connection charges for the party seeking connection will normally be based on the level of connection assets consistent with the practicable minimum scheme needed to meet the applicant's requirements.

B.11 There may be cases where there are specific conditions where the practicable minimum scheme at a site has to be greater than the strict,

theoretical interpretation of the standards. In these cases all units will still be assigned to connection and connection charges levied.

B.12 A practicable minimum scheme is considered in terms of the system as a whole and may include a change in voltage level.

Annex 10C: Typical Allocation Example



Users GenCo: A Generator with 4 Generating Units @ 500MW **each** **(CEC of 2000MW)**
DistCo: A Distribution Company with a demand of 220MW on 5 outgoing circuits

Asset Details

132kV Assets	120 Bus Section Bay 130 Bus Section Bay 180 Double Busbar Bay 280 Double Busbar Bay SGT1 132kV Cable 200m SGT2 132kV Cable 200m
SGTs at 400kV	SGT1 400/132kV 240MVA SGT2 400/132kV 240MVA
400kV Assets	X120 Bus Section Bay X220 Bus Section Bay X320 Bus Section Bay X130 Bus Coupler Bay X430 Bus Coupler Bay X166/X169 Reserve Busbar Bay X110 Double Busbar Bay X210 Double Busbar Bay X105 Double Busbar Bay X205 Double Busbar Bay X305 Double Busbar Bay X405 Double Busbar Bay

Allocations:

The allocation begins with the lowest voltage assets.

132kV Bus Couplers and sections (120,130)

The DistCo has 5 outgoing LV feeders and therefore from the allocation guide requires 4 bus couplers and sections.

The site has 2 bus couplers and sections hence is under endowed in relation to the generic rules.

Bus Coupler/ Section	1	2	
DistCo	1	1	2/1 of 2 = 100% to DistCo

400/132kV 240MVA SGTs and associated circuitry

Demand = 220MW SGT1 = 240MVA
SGT2 = 240MVA Total = 480MVA = MW assuming unity power factor

The first SGT meets the demand and the second SGT covers the requirement to meet demand under the loss of one transformer. Hence both SGTs are allocated

100% to distribution. The associated SGT circuitry (180, 280, SGT cables and X110, X210) follow the allocation of the SGTs, I.e. 100% to the distribution company.

400kV Bus Couplers and Sections (X120, X220, X320, X130, X430)

DistCo has 2 outgoing SGT feeders deemed allocated and therefore requires 1 bus coupler/section.

GenCo has 4 connected generating units and therefore requires 5 bus couplers/sections. Applying left-hand rule:

Bus Coupler/Section	1	2	3	4	5	
DistCo	1/2					1/2 of 5 = 10% to DistCo
GenCo	1/2	1	1	1	1	9/2 of 5 = 90% to GenCo

The X166/X169 Reserve Busbar Bay follows the allocation of the main bus coupler and section bays. Note it does not feature in the calculation of the allocation.

The DistCo therefore takes an allocation of 10% of (X120, X220, X320, X130, X430 and X166/X169) and the GenCo 90% of all these assets.

400kV Main Transmission Infeeds (X105, X202, X305, X405)

DistCo has less than 300MW of demand and therefore requires 2 MTIs.
Generator has **a Connection Entry Capacity of** more than 1320MW ~~of generation~~ and therefore requires 4 MTIs.

The site has 4 MTIs.

Bus Coupler/Section	1	2	3	4	
DistCo	1/2	1/2			2/2 of 4 = 25% to DistCo
GenCo	1/2	1/2	1	1	6/2 of 4 = 75% to Generator

The DistCo therefore takes an allocation of 25% of all four MTIs and the GenCo 75% of all four MTIs.

APPENDIX 2 continued – Proposed Definition of Connection Entry Capacity (CEC)

Glossary

Connection Entry Capacity (CEC)	As defined in the Connection and Use of System Code and used in paragraph 10.15 of the Statement of the Connection Charging Methodology