Report from the Transmission Access Standing Group (TASG) to the CUSC Panel December 2002

1. Summary

This report is presented in draft form following the presentation by NGC[1] of their interpretation of recent discussions with Ofgem concerning the direction of Ofgem's thinking on Transmission Access. As this direction appears to cut across the direction of development of the TASG work to date, it was agreed by the TASG that further work would be abandoned and the report tidied up, as it stands, and be presented to the CUSC Panel. Therefore, this report is an incomplete draft that has not been subject to final discussion, clarification and revision. Nevertheless, the work to date has explored issues surrounding some possible models for transmission access and common issues arising from the consideration of a number of models. I hope that this incomplete draft will help avoid 're-inventing the wheel' in considering Ofgem's future proposals.

As acting Chair of the TASG, I would like, with pleasure, to acknowledge the contribution of Phil Russell as chair of the group up to the presentation of the first draft report to the CUSC Panel in August 2002.

Malcolm Taylor (Acting Chair, TASG) December 2002.

2. Introduction

On 26th February 2002 Ofgem published "Transmission Access and Losses under NETA: revised proposals". This contained a comment that it was for the industry to consider the proposals further under the governance of the CUSC (in respect of Transmission Access). In response to this suggestion the CUSC Panel considered the matter at its meeting on 22nd March 2002 and agreed to establish a Transmission Access Standing Group (TASG) to identify and evaluate options for change. This document reports the work of the TASG.

3. Standing Group Process Details

3.1. Terms of Reference and Membership

The initial Terms of Reference and the initial list of members of the TASG were agreed by the CUSC Panel in March 2002 and can be found on NGC's web site at:
http://www.nationalgrid.com/uk/indinfo/cusc/pdfs/ToR-Tx-Access-Standing-Group-Issue-1.pdf
The initial terms of reference are also reproduced in Appendix 1. Subsequent to the August/September 2002 consultation on the draft report and the assessment of CUSC Amendment Proposal CAP 043 the CUSC Panel agreed to extend the terms of reference of the TASG to pick up issues identified during the CAP043 assessment but recognised to be outside the scope of CAP 043. The revised terms of reference are also reproduced in Appendix 1.

Although the formalities of the CUSC required the Panel to nominate an initial list of Members of the Standing Group (as contained in the Terms of

[1] Although the National Grid Company and Transco have recently merged, NGC continue to be the transmission licence holder.

Reference), in practice the membership of the Group and contribution to the discussions was drawn from a wider membership of the Industry as indicated by the attendance at the various meetings. The attendees and minutes of the TASG meetings can be found on NGC's website:
http://www.nationalgrid.com/uk/indinfo/cusc/mn_draft_terms_of_reference.html

3.2. Group Process

The TASG met 7 times between April and July 2002. The first meeting (25th April 2002) of the group was solely concerned with agreeing a refined Terms of Reference for submission to, and subsequent approval from, the Panel together with agreeing an expanded membership of the Group.

The second meeting (9th May 2002) heard presentations on the current Transmission Access regime together with a view of the pertinent features contained in the February 2002 Ofgem document. It then went on to agree that future discussions should be centred around 5 key questions being answered from the perspective of different categories of market participant.

The third meeting (22nd May 2002) heard these presentations and facilitated discussion as to the extent to which the ideas contained therein met the objectives as set out in the Ofgem document and the advantages and disadvantages that would accrue to participants if such proposals were to be implemented. The fourth meeting (10th June 2002) heard a presentation on European developments in the area of Transmission Access and debated the extent to which these could be considered to constrain the development of options in the UK. In addition NGC presented a "strawman" based on the discussion and presentations from the third meeting. The stated intent of this proposal was to be an evolution from the current arrangements rather than a radical departure from them. This "strawman" was further refined following subsequent debate, particularly in respect of the demand side of the market as the original version concentrated on the generation side.

The fifth meeting (21st June 2002) concentrated on refining the strawman proposals and, in particular, the implications of Users purchasing rights for periods greater than 1 year at defined prices.

The sixth meeting (5th July 2002) reviewed the discussions to date on the Generation / Entry side of the market and further developed proposals for the Demand / Exit side of the market.

The seventh meeting (23rd July 2002) of the Standing Group considered and amended the draft report prior to its submission to the August 2002 CUSC Panel.

Following submission of the draft report of the TASG to the CUSC Panel on 16th August 2002, it was agreed that the group would hold a one-month consultation with the industry to elicit the views of Industry participants and other interested parties as to whether the contents of the draft report covered the range of options and issues for future Transmission Access arrangements (i.e. were there other viable options which had not been recorded) and whether those consulted considered any of the issues raised in the report to be factually erroneous.

The results of the consultation were considered by TASG on 14th October 2002, after which a further report to the CUSC Panel (25th October) proposed

a plan for production of the final report and its submission to the December CUSC Panel meeting. The Panel accepted this plan and the TASG held 3 further meetings to complete the report.

3.3. Related Matters

During the course of the TASG's work there have been related developments in a number of areas. These are dealt with in greater detail in Section 6 of this report.

4. Driver for Change to Transmission Access Arrangements

The driver for change to the current Transmission Access regime arises from Ofgem's intention to improve NGC's investment signals and incentives. In order to achieve this they believe it is necessary for access rights to be purchased on a long-term basis by all market participants and for those rights to be "financially firm". On the generation side this is the position already, to a large extent.

The diagram below sets out bounds of charging options for access to and use of the transmission system. The current position is predominantly on the more static side. The TASG discussed the implications of moving from the current regime on NGC's planning standards and the current method of shallow connection charging. On the first issue it was noted that the last time the security standards were reviewed, following a lengthy debate the majority of Users had accepted that they were appropriate. However, the TASG distinguished between planning and operational standards and recognised that a more dynamic approach to managing investment decisions would require continuing adherence to an operational standard without necessarily adhering to a planning standard. Also, in the "more dynamic" scenario NGC's investment decisions would concentrate on whether the value of the reduction in constraint costs borne by market participants would exceed the value of capital investment and subsequent income to NGC (borne by market participants) over the life of the assets created. This approach to investment might result in a move away from being driven by defined planning standards.

Charging Options	
? MORE STATIC	? MORE DYNAMIC
• Shallow Charging	• Deep Charging
• Prescribed Standards	• Negotiated Standards
• Centralised planning	• Devolved Planning
• System pays	• User pays
• Socialisation of some costs, entry/exit	• Strongest locational signals
• RPI-X/periodic review	• Contractual return, reasonable rate of return

On the second issue there was an instinctive feeling that the current shallow charging methodology would not be compatible with maximising the locational message and hence the economic efficiency but recognised that Ofgem's previously stated position was that it is not in favour of deep connection charging.

Although the Standing Group was formed under CUSC governance, which is concerned with the contractual arrangements, the subject matter of the

discussion inevitably took the Group into the province of Charging Methodologies and other areas outside the direct remit of CUSC. The Group recognised that where it has discussed such matters it was in order to explore options and implications rather than making recommendations.

5. Consideration of Candidate Access Schemes

5.1. General comments

The Group identified 5 key questions (See Appendix 3) that should be posed to ensure an internally consistent model. Additionally, the Group attempted to summarise the success criteria to apply to models. These criteria came from a consideration of the Ofgem February 2002 document and the Applicable Objectives for the CUSC (see Appendix 3). These were applied to 3 families of models: generation access, demand access via a supplier, and demand access via an enhanced role for the distribution network operator (DNO) as a gsp group capacity agent. Within the generator family, some of the issues specific to Interconnector users and embedded generators were also addressed.

A template was developed to allow comparison between models and families of models and the following sections use the output of these templates. As well as the 5 questions the issue of duration and variation of rights is addressed.

5.2. Feedback from consultations

The response to the consultation exercise is summarised in Appendix 2 and full copies of the responses are at the NGC web site
http://www.nationalgrid.com/uk/indinfo/cusc/pdfs/TASG_Report_All_Comments.pdf
A number of responders wished to see greater detail regarding the models outlined in the August TASG report and the following sections seek to achieve this.

5.3. Transmission Connected Generation

The generation model is similar to the status quo, including changes proposed via CAP043, plus additional ideas. For obvious physical reasons it is the easiest of the families to consider.

5.3.1. How should the rights be defined?

The right of access would be a financially firm commercial right, albeit that it is allocated to parties who have, or have applied for, connection agreements and hence are, or intend to be, physical players. The right is anticipated as probably being of value only to physical players. The right would be explicitly defined ex ante as a fixed volume. The right would be defined as the right to export (import) multiples of 1MW for one year at an entry point on the transmission system. The right would apply on a station basis, ideally metered at the entry/exit point, otherwise metered elsewhere and adjusted to that entry/exit point using an agreed transparent adjustment process. Breach of provision of the right would result in compensation and provision of the right would be subject to the reasonable control of the network operator. Initial allocation of rights would be on the basis of current connection agreements.

5.3.2. Who Buys and Sells and trades these rights?

Party to Party: At a given node in the transmission system, it would be possible for parties to trade their rights. In general this is anticipated to have little effect on the transmission system security or operation, and

could be achieved via novation of existing contracts without the need for NGC facilitation of trade. Nevertheless, NGC would always need to be informed, not least to ensure charging arrangements are orderly.

Between nodes it is anticipated that NGC would always need to facilitate the trades. It is envisaged that such facilitation would involve system studies involving snapshots of the network before and after the proposed trade so as to determine the 'rate of exchange' of MW between nodes.

Party to NGC: At a given node, a Party could trade access with NGC. NGC would then be free to release additional capacity either at that node, or at another node. The price at which such later trades were settled would presumably be regulated to ensure fairness.

5.3.3. What are the consequences of breaching?

Breach by Service Provider: When there is a loss of service provision the generator suffers loss of access leading to loss of profit from energy sales. The two BSC modifications P80 and P87, if accepted by Ofgem will offer some progress on the loss of profit from energy sales. TNUoS is an estimate of the costs of providing access, given that the access is locationally specific. It should be noted that costs incurred as a result of damage to gensets arising from loss of access are not dealt with here, and nor is the lost opportunity to provide ancillary services. The former may be ameliorated via insurance. The latter remains an unresolved issue.

Breach by Party: When a generator exports more output onto the system than he has contracted for, he will automatically increase the value against which his TNUoS charges are calculated for the whole of the current financial year. Beyond this TNUoS costs could be structured so that generators are incentivised to acquire sufficient rights in advance. However, it seems unlikely that any penalty arising would be a 'genuine pre-estimate of loss'. If it is a penalty then the additional question arises of to whom the penalty would be paid. A beer fund for redistribution would probably entail unsupportable administrative complexity, although the current year-on-year adjustment process may be sufficient to deal with this. A breaching generator may cause additional balancing costs on the network, although the additional cost is likely to be extremely difficult to isolate. Therefore, in the interests of simplicity and practicability, it is suggested that breaches are dealt with, in the first instance, via the Significant Incident Report/endorsement of licence route currently successfully used for generators not following their physical notifications. Assuming continuance of the current structure of TNUoS charges, some generators would be net receivers of TNUoS charges. It is anticipated that, as at present, they would be required to demonstrate their ability to export up to their maximum access, in order to receive these payments. Repeated failure would lead to the SIR route outlined above.

5.3.4. Who are the Players and what are their contractual Relationships?

NGC Licensed Party: For Licensed Parties the contractual vehicle via which obligations and rights are established and protected is the CUSC and related bilaterals. The Party has an obligation to pay TNUoS (and any overrun TNUoS, see above), as well as the prudent operator

responsibility not to exceed the maximum of the defined right. NGC has the obligation to provide the access service, subject to the payments in the event of breach.

NGC Unlicensed party: For an unlicensed, or licence-exemptable party the contractual relationship may exist either directly if the party has volunteered to enter into a CUSC use of system agreement or indirectly via a licensed party (such as a supplier for an embedded LEG). The obligations would be similar for a licensed party.

5.3.5. What are the Implications for NGC's Investment Decisions and Price Control?

It is envisaged that this model will be a facilitating mechanism whereby trading access by NGC, short or long term, would be part of the toolkit by which the System operator would optimise use of the system. It would be an alternative and complement to capital investment. This model does not address how NGC would be rewarded for squeezing more capacity out of the existing system without capital investment. Nor does it consider the duration of such a reward.

5.3.6. Improved Short-run Efficiency of Operation of the Transmission System

Such a model may improve the short-run efficiency of operation of the transmission system although, it is not clear that this gives more than can already be achieved via NGC's bilateral contracting options. Management of access to the system will involve NGC using a variety of tools ranging from constraint contracts through to capital investment so as to minimise the overall cost of provision of access. In this way the overall the costs of constraints and TNUoS should not increase as quickly as if new capital investment were the only option.

The risk of failure of the transmission system should be slightly increased using this approach, but still held within the operational standard.

Of itself this model is silent on choice of firmness of access, which would need to be addressed via an overlay of choice of connection agreement or other bilateral contract with NGC.

5.3.7. Improved Long-term Investment Efficiency

The new options for access should lead to more cost-effective network reinforcement decisions. A less deterministic approach to investment may be more efficient, serving to reduce locational incentives. It is likely to sharpen decisions to decommission.

5.3.8. CUSC Applicable Objectives

This model may lead to access to the transmission system being made available more quickly and cost-effectively, thereby encouraging efficient discharge of NGC's licence obligations. By encouraging earlier market exit and entry of generation, it may encourage competition in generation.

5.4. Interconnectors

A straightforward assessment of Interconnectors as they are structured now suggests that, in general, Interconnectors can be thought of as similar to transmission connected generation when acting so as to

import energy into England & Wales (E&W), and similar to transmission connected demand when exporting energy from (E&W). Careful consideration needs to be given to the impact of any transmission access regime on the importing/exporting capability of an interconnector, as well as the concept of superposition of trades. The differences and additions between the generation strawman and the interconnector are highlighted below.

Additionally, the detailed assessment of possible treatments for Interconnectors suggested a more radical proposal that would be to treat Interconnectors as part of the infrastructure of the grid. The implications of this are assessed in the template document (see Appendix 5), but not discussed more here.

An important criterion against which Interconnector arrangements must be tested is that they do not unduly impede cross-border trade, noting that there are relevant EC directives in this area.

5.4.1. How should the rights be defined?

The right is assigned to the Interconnector owner with subsequent re-assignment to Interconnector users under the terms of usage of the Interconnector. This may be considered analogous to NGC interfacing with the DNOs. Rights for exporting energy from E&W are defined ex post implicitly. BSC P80 and P87, if accepted will not compensate export from E&W in the event of breach of service by the network provider. This remains an issue. Finally, it should be noted that for Interconnections, in particular, the actions of system operators on the connected system could affect the capacity available and the flows between systems.

5.4.2. Who Buys and Sells and Trades Rights?

The differing roles of the Interconnector owner and Interconnector users add a further layer of contractual complexity. Trades are possible between NGC and the owner. Additionally trades between users can take place facilitated by the Interconnector owner. It should be noted that users of the Anglo-French Interconnector can already trade energy down to a daily frequency and will shortly have intra-day trading. On the Anglo-Scots Interconnector trading is half-hourly; these users would want no lesser access. Under the broad generation strawman approach, which is essentially annual, shorter-term access trading could be achieved in the trades between users and the owner. If the interface was between NGC and the Interconnector users, then a more radical solution to the treatment of Interconnectors may have to be considered.

5.4.3. What are the consequences of Breaching?

It should be noted that a breach could be caused by actions on the connected network affecting flows in E&W. The treatment of breaches needs to be sensitive to this issue.

5.4.4. Who are the Players and what are their contractual relationships?

Between the Interconnector owner and users there are separate additional interconnector usage agreements. In this instance the Interconnector owner acts as a trader selling on rights to the Interconnector users.

5.4.5. Duration, Price Structure and Variation of Rights

The relationship between the owner and NGC would be similar to that for a generator. Additionally, the relationship between the owner and users could involve shorter periods, differing price structures and differing abilities to vary rights.

5.4.6. Implications for NGC's investment Decisions, short and long run efficiency of the transmission system and CUSC applicable Objectives.

Consideration against these criteria leads to similar conclusions as for the generation strawman.

5.5. Licensed Embedded Generation

For licensed embedded generators, generally the same considerations apply as for grid-connected generation, once their power has reached the grid. As the generation has a CUSC use of system agreement they would have the same rights and obligations with the same consequences of breach.

However, the embedded generator would still have the problem of the effect of constraints within the distribution network affecting the ability of the generator to export onto the transmission network. Distribution network limitations are most likely to pose an asymmetric access risk for the generator. Such limitations are most likely to mean the generator is unable to use his full contracted access. However, for an embedded generator, NGC would argue that the loss of access due to this is beyond their ability to influence. Additionally, the energy risks need to be addressed in the BSC. Dealing with this problem holistically would involve addressing distribution network access consistently with transmission access. This is beyond the terms of reference of TASG.

5.6. License-exempt Generation

License-exempt generation has no mandatory direct contractual relationship with NGC, unless it is registered as a BMU. If it is registered as a BMU then, in terms of access, it will be similar to a licensed embedded generator described above. Otherwise, unless and until access arrangements on distribution networks are revised, the only way in which LEG generators will be part of these arrangements would be as part of a demand-side trading arrangement with a licensed supplier.

5.7. Demand

5.7.1. Supplier Strawman

This model seeks to use the concepts developed for the generation strawman and apply them directly to demand with the access issues dealt with via the Supplier at the gsp group.

5.7.2. How should the rights be defined?

The right of access would be a financially firm commercial right, based on physical agreements for connection. Off-take would be defined by Connection Off-take Capacity (COC) and Transmission Off-take Capacity (TOC), analogous to the concepts of CEC and TEC under development in CAP043. The Supplier would have the option of either firm ex ante rights, or non-firm ex post measured rights, or a mix of the two. The ex ante fixed volume rights would attract compensation if not provided, whilst the ex post metered volume rights would not attract compensation if not provided.

5.7.3. Who Buys and Sells and trades these rights?

Similar to the generation strawman

5.7.4. What are the consequences of breaching?

Breach by Service Provider Breach of firm rights would result in compensation, non-firm rights would not, thereby encouraging purchase of ex ante firm rights.

Breach by Party Overrun by holders of firm rights would attract no compensation for loss, thereby encouraging purchase of ex ante firm rights. Overrun would be paid for at the normal TNUoS rate. Some suppliers would have both firm and non-firm rights, others only rights of one form. The general structure of charges would apply regardless of whether demand-side TNUoS was charged using triads, or not.

5.7.5. Who are the Players and what are their contractual relationships?

NGC-Licensed Party The relationship would be between NGC and Suppliers, (or directly connected customers who have their own supply licence). The Party would have an obligation to pay TNUoS (and any overrun TNUoS, see above), as well as the prudent operator responsibility not to exceed the maximum of the defined right. NGC has the obligation to provide the access service, subject to payments in the event of breach.

NGC-Unlicensed Party As with the generation strawman.

5.7.6. What are the implications for NGC's investment Decisions and Price Control?

As with generation strawman. Additionally, by clarifying the difference between firm and non-firm access, this will give NGC cost targeting messages for the risk associated with servicing infirm access.

5.7.7. Improved Short-run Efficiency of Operation of the Transmission System

As with the generation strawman. Additionally, this model gives choice of firmness of access, at least for the demand side.

5.7.8. Improved Long-term Investment Efficiency

As with the generation strawman. The option of non-firm access could lead to a greater variety of long-term investment options.

5.7.9. CUSC Applicable Objectives

As with the generation strawman. Additionally, the firm/infirm choice will allow greater diversity of supplier positioning in the market, probably leading to wider choice to the end customer.

5.8. Role of the Distribution Network Operator

Two analyses were made of the role of the DNO and the detailed analyses are attached (see Appendix 5). Both of them envisage the DNO as a gsp group transmission access capacity agent and there is substantial overlap between the two analyses. The scope of this role is an alternative to the direct Supplier/NGC relationship set out in the previous section. As this document is limited to a consideration of transmission access, the interface between the DNO and Supplier, or embedded generator is formally outside its remit. Nevertheless, for completeness some thoughts are offered concerning this interface. The current debate about how best to achieve governmental targets for

distributed generation has led to a consideration of the DNO as a more active network system operator. The outcome of the coming DNO price review is unknown, but in order for this option to work optimally, the new remuneration arrangements would need to encourage this role. Therefore, April 2005 is the likely earliest date when full implementation of the revised DNO role described below could be targeted to commence. The fundamental nature of the change would require careful planning and engagement of DNOs at an appropriate level. This will also require major input from Ofgem. The following notes highlight the components of the analyses in the same order as for the generation strawman.

5.8.1. How should the rights be defined?

The right of access to the transmission system would be a financially firm commercial right, allocated to the DNO who then allocates access on to Suppliers and embedded generation. The DNO allocates to parties who have, or have applied for, connection agreements and hence are, or intend to be, physical players. The transmission access right is anticipated as being of value only to physical players. The right could be explicitly defined firm ex ante as a fixed volume, as per the generation strawman. Additionally, from the DNO to the Supplier or generator, access rights could be defined non-firm ex-post implicit against metered output or demand. The right would be defined as the right to export (import) multiples of 1kW for one year at an entry point on the transmission system. The right could be reflected down to a premises basis. (This would be subject to a suitable method of translating gsp to premises being devised.) Breach of provision of the explicit right would result in compensation from NGC to DNO and hence onto the affected end users and provision of the right would be subject to the reasonable control of the network operator. Initial allocation of rights would be on the basis of current connection agreements.

5.8.2. Who Buys and Sells and Trades Rights?

Party-to-Party: Within a given gsp group at the interface to the transmission system, it would be possible for parties to trade their rights. In general this is anticipated to have little effect on the transmission system security or operation, and could be achieved via novation of existing contracts without the need for NGC facilitation of trade. Nevertheless, where trade affects the operation or security of the distribution network below the gsp, the trade would probably need to be facilitated by the DNO. The DNO would, in any case, need to have knowledge of these trades.

Between gsp groups it is anticipated that both DNO(s) and NGC would always need to facilitate the trades. It is envisaged that such facilitation would involve system studies involving snapshots of the network before and after the proposed trade so as to determine the ‘rate of exchange’ of MW between nodes and within distribution networks. The complexity of this suggests it is unlikely to happen.

DNO to NGC: Within a given gsp group, a DNO could trade access with NGC. NGC would then be free to release additional capacity elsewhere on the transmission system.

Individual customers: Rights would be tagged to premises at an entry/exit point. In the event of the customer changing supplier this would be recorded by the DNO.

5.8.3. What are the consequences of Breaching?

Breach by Service Provider: When there is a loss of service provision by NGC, then compensation for loss of access would be similar to for the generator strawman, with pass-through by the DNO to the affected firm end-users. Loss of access within the distribution network would be from DNO to affected end users. It should be noted Connection and Use of System charging for distributed connected parties is currently under review and development by Ofgem with a view to implementing a revised approach at the next price control review. The energy costs arising from loss of access are dealt with differently between HH and NHH connectees. Suppliers of NHH customers are covered to some extent via the spreading effect of the gsp group correction factor. Suppliers of HH customers are compensated to some degree via SSP imbalance payments.

Breach by Party: When a distributed generator exports more output onto the system than he has contracted for, he will automatically increase the value against which his TNUoS are calculated for the whole of the current financial year. [Ofgem are considering DUoS for distributed generators].

5.8.4. Who are the Players and what are their contractual Relationships?

NGC-DSO-Licensed Party Bilateral agreements/CUSC and via licenses. The Party has an obligation to pay DUoS & TNUoS (and any overrun TNUoS, see above), as well as the Prudent Operator responsibility not to exceed the maximum of the defined right. NGC has the obligation to provide the access service to the DNO, subject to the payments in the event of breach. In turn the DNO provides access on to distribution network connected parties.

NGC-DSO-Unlicensed Party Bilateral agreement directly, or indirectly via licensed party (e.g. Supplier and LEG distributed generator)

5.8.5. What are the Implications for NGC's Investment Decisions and Price Control?

As per generation strawman

5.8.6. Improved Short-run Efficiency of Operation of the Transmission System

There is potential for the DNO to encourage demand and distributed generation to behave in a manner that optimises utilisation of the transmission access capacity. The DNO may also have an incentive for short-term demand transfers between gsps so as to optimise transmission utilisation. This would require close operational liaison between the network operators. Risks of failure may increase but as with the generation strawman they would be capped by operational standards. There may be a knock-on effect on the guaranteed standards of performance for DNOs that will need to be taken into account. This model is silent on choice of firmness.

5.8.7. Improved Long-term Investment Efficiency

This model places primary responsibility for contracting with NGC with the DNOs. DNOs, like generators, have long-term capital assets associated with the use of the transmission network and must therefore plan their use of the NGC system on a long-term basis. A less deterministic approach to investment may be more efficient, serving to reduce locational incentives. It is likely to sharpen decisions to decommission.

5.8.8. CUSC Applicable Objectives

This model may lead to better planning of the transmission network, because all of the directly contracting parties have similar long-term investment perspectives. The enhancement of the NGC-DNO interface may be a platform for incentivising efficient active management of the DNO networks. One possible route towards this might be to incentivise minimisation of exit charges. As regards enhancing competition in supply and generation, this model should allow suppliers to focus on energy issues and should also offer increased opportunities for distributed generation to compete in the provision of network support services to the DNO.

5.9. General issues arising from consideration of models

5.9.1. Duration, Price Structure and Variation of Rights

1 year or Multi-year: It is envisaged that there will be choice over duration of rights bought, ranging from 1 year to multi-year. It should be noted that connection agreements are already multi-year.

Cost Recovery: NGC is currently allowed to fully recover allowed revenues. If this continues, the there may be an issue of connected parties being charged differing amounts depending on when they commit to buying access. If earlier decision and longer agreements are valuable to NGC because of firm foreknowledge of the volume and location of access required then they might attract a price that is advantageous to the connected party, representing the value to NGC of such foreknowledge. It is not clear how a value-driven price will be squared with recovery of allowed revenues.

Renewal Optionality: At the moment generators have the automatic right to renewal of access year on year. Even with multi-year access it is likely that there will be a requirement for renewal at some point in the generator's life. In order to provide stability, it is suggested that this right remains.

Price Structure: Under the current price structure connected parties have small annual price risk. Regulatory oversight and the structure of charging means that, on average, there will be smoothed annual changes in price. If NGC were able to offer fixed prices for access this is likely to be attractive, compared with the current system, if parties perceive volatile access prices, or if their valuation of future price trends suggest that the price offered will be cheap. A variant of fixed prices would be prices with a pre-determined rate or driver of change, such as in line with an inflation index.

Variation of Rights: Generators need the freedom to vary their rights of access, in an orderly way. It is suggested that they can seek to vary their rights at any time. Variation downwards should be with immediate effect, whilst variation upward would depend on an NGC process. The variation having been made, the generator would still be liable for

TNUoS for the rest of an agreed period. The generator would be free to vary his rights of access in units of 1 MW, up to his total contracted amount.

5.9.2. Constraint Management and spatial resolution of access

For generators and suppliers access is most conveniently packaged at the metered premises level, such as power station, HH customer within a gsp, or NHH customer within a gsp group. For Interconnector Owners it probably can only be dealt with on a quasi-power station basis. For NGC to resolve operational access issues such as constraints, they would like to deal with access at a lower level of resolution. For example, post fault constraint resolution may require sub transmission node resolved access trades for transmission-connected generation. Similarly, demand management that is only located somewhere in a gsp group may be inadequately identified to be useful to NGC in dealing with operational access issues. This suggests that the transmission access models developed to date can only form part of constraint management and would need to be overlaid by bilateral contracts, such as PGBTs, to achieve the necessary locational certainty to be effective.

An alternative direction of development is to resolve access only to the nodal or even zonal level. This would allow a portfolio of plant to operate with a value of TEC less than the sum of the CECs.

5.9.3. Demand Forecast Certainty

At the moment NGC do not rely upon Supplier's to provide the forecast of the demand that they use (either its total or its disposition around the transmission network). Their balancing actions are driven by their own forecast of demand. In a world in which there is a mixture of firm ex ante and infirm ex post (although even this is ultimately capped by the physical limits of the super-grid transformers) access purchased, what should be NGC's basis of action for system balancing? For example, if the sum of firm access and forecast infirm access at a gsp is 125% of the NGC forecast of likely demand, who should bear the costs of any access trading NGC would need to do? Which balancing costs can be isolated to the actions of which parties? Is this approach practicable and would the materiality of the differences between participants be such as to make it cost-effective?

5.9.4. Structure of Access Charges

None of the models discussed above prescribes structures or levels of charges for access, although each proposes some attributes of the charging regime that would work best with the model proposed. Additionally, the relationship between the structure of transmission network and distribution network charges needs consideration. No model prescribes that they should be of the same structure, but the differences between them should not be such as to incentivise perverse choices of location between voltage levels, distribution or transmission networks, or location on a network. These considerations need to be taken forward elsewhere.

5.9.5. Transfer of Customers between Suppliers

Transfer of NHH and HH customers between suppliers is relatively easy and rapid. The development of access arrangements must not constrain this. Equally, suppliers must not be faced with additional risks, arising

from the transfer of access arrangements with the transfer of customers. With who does the access right reside: the customer, the customers' premises, the supplier, or the DNO?

6. Other Relevant Developments

6.1. Ofgem Consultation on System Operator Incentives Oct 2002

Ofgem have begun a process for development of revised System operator Incentives acting from April 2003. The initial document (October 2002) anticipates a fully tradable system, of firm access rights in place before April 2003. A refined proposals document is promised imminently, with a final decision document in January 2003. Details of the document and process can be found at the Ofgem web site
http://www.ofgem.gov.uk/docs2002/67ngc_sysopscheme.pdf

6.2. NGC Proposals for CUSC amendments (CAP043)

CAP043 was the first product of the discussion of the TASG and NGC's development of a strawman. It will be presented to Ofgem before Xmas 2002 with a view to implementation by April 2003. The amendment seeks to define the firm right of access of a generator visa two new definitions CEC and TEC, together with a means of implementing the definitions for all generators with CUSC se of System bilateral agreements. Details of the amendment and its progress can be found at the NGC web site
http://www.nationalgrid.com/uk/indinfo/cusc/amendments.asp

6.3. NGC Proposals for revised Transmission Network Use of System Charges

NGC have recently proposed changes to the TNUoS charging arrangements that are relevant to transmission access. These changes include: i) the use of the CEC/TEC definitions for calculation of generator TNUoS charges, ii) the replacement of demand-side Triad charges by a more averaged approach using demand over a Winter Peak Period, and iii) a change in the treatment of distributed generation that is CVA metered so that it is treated like negative demand. The changes are proposed to be implemented in time for April 2003 and are detailed on the NGC web site at
http://www.nationalgrid.com/uk/indinfo/charging/mn_modifications.html

6.4. BETTA

The BETTA project is scheduled for implementation by April 2004. It will profoundly affect the provision of access in England Scotland and Wales, by splitting the roles of system operator and transmission asset owner. There will be one system operator for Great Britain and it is anticipated that the transmission access arrangements will involve role out of the E&W CUSC. See the DTI and Ofgem web sites for greater detail.

6.5. Continental European Cross-border Trading Developments 2003 onwards

Cross border trading within the EU is under very active development. At the moment E&W is not a participant in the trading process under development. The current transmission access arrangements in E&W conform to the EU directives on liberalisation of the energy markets. Further developments will have to ensure continuing conformance.

6.6. Distributed Generation and BSC Developments Dec 2002

The DTI/Ofgem initiative on distributed generation has led to a wide diversity of technical and regulatory work packages being developed. They can be seen in summary form at the distributed generation web site:
http://www.distributed-generation.org.uk/
Additionally, there are a number of proposed modifications to the BSC that will impact directly on the commercial position of distributed generation:
http://www.elexon.co.uk/ta/modifications/mods_register.html

7. CONCLUSIONS

- This report is incomplete and has not been subjected to final review, debate and amendment by the TASG.
- The report summarises the drivers for change on transmission access and the criteria that may usefully be applied to test access models for coherence and internal consistency
- Using an evolutionary approach from the status quo, models have been considered that demonstrate how the various types of generators could participate in a transmission access scheme that was characterized by firm tradable access.
- Similarly, some, (but not as much) progress has been made in considering how demand can be dealt with under this type of trading environment. Two models for dealing with demand were considered:
    - A direct Supplier/NGC interface with access that was firm and/or non-firm; &
    - A role for the Distribution Network operator as a gsp group capacity agent who traded firm access with NGC and then managed traded access to Suppliers and generators on the distribution network.

Appendix 1 – TASG Terms of Reference and revised Terms of Reference

Introduction

1. Ofgem's Revised Proposals document on Transmission Access and Losses was published on 26 February 2002. The content of the document was discussed at the CUSC Amendments Panel meeting on 22 March 2002. At the meeting, the Panel agreed that a Standing Group should be established under the CUSC governance to consider further the reform of the transmission access arrangements and to identify and take forward the appropriate contractual framework to provide for the new arrangements.

2. This paper outlines the working arrangements and terms of reference for the Transmission Access Standing Group (TASG).

Proposed Membership of the Transmission Access Standing Group

3. The CUSC Amendments Panel agreed to establish the TASG with the following membership:

Chair:	Phil Russell (TXU)
Other Members:	John Capener (British Energy)
	Dick Cecil (London Electricity Group)
	Peter Clubb (GDF)
	Hugh Conway (Energywatch Representative)
	Nigel Cornwall (Cornwall Consulting)
	Richard Court (National Grid)
	Charles Davies (National Grid)
	Nick Frydas (EDF Trading)
	Mike Harrison (Scottish Power)
	Duncan Jack (St Clements)
	Paul Jones (PowerGen)
	David Lane (Clear Energy)
	Phil Lawton (National Grid)
	Simon Lord (First Hydro)
	Keith Miller (Teesside Power)
	Brian Sequeira (British Gas)
	John Stewart (Campbell Carr)
	Malcolm Taylor (AEP)
	David Tolley (Innogy)
	Barbara Vest (RWE Trading Direct)

Note: The above membership was expanded and the actual attendees at each of the meetings are recorded in the Minutes, available on the NGC CUSC Website.

Meeting Administration

4. The frequency of TASG meetings shall be defined as necessary by the TASG chair to meet the Terms of Reference and time scales as defined below.

5. National Grid will provide technical secretary resource to the TASG and handle administration arrangements such as venue, agenda and minutes etc.

6. The TASG will have a dedicated page under the CUSC section of the National Grid Industry Information website. This will enable TASG information such as minutes and presentations to be available to a wider audience in a timely manner.

Terms of Reference

7. The TASG has been established and actioned to consider further the reform of the transmission access arrangements and to identify and evaluate the options for changes (consistent with Ofgem's 'Transmission access and losses under NETA - Revised Proposals' document) and their implications for the CUSC and other industry documents.

8. The Standing Group should review the points set out in Section 4 of Ofgem's February 2002 paper on Transmission Access & Losses as they relate to the current access arrangements and in particular should review:

- The 'firmness' of the allocated rights to all Users who use the transmission system (also need to clarify the Maximum Export Capacity and demand side rights of Parties and clarify what obligations exist with regards which category of transmission charge that has to be paid by Parties for the allocated rights);
- How allocated rights for use of the transmission system are enforced (i.e. how it is ensured that Users have the correct agreements in place with National Grid and how they comply with them) and how the allocated rights are monitored and settled;
- Compensation for constraints, failures and disconnections;
- The duration and quantity of the rights allocated;
- The inter-relationship and linkage to other industry arrangements, and
- The potential for the trading of any allocated rights between Parties (e.g. facilitating novation of connection agreements);

9. In progressing the issues raised above, the TASG should be cognizant of any work undertaken in relation with arrangements for Transmission Access in other industry work streams (e.g. transmission losses under the BSC, cost signalling under the Charging Forums and SO Incentives under the Licence). Furthermore, the TASG should be mindful of any interaction between the Transmission Access arrangements and any other relevant issues being considered by the industry (in particular those relating to BETTA, European Developments e.g. Cross Border Tariffs and the Government's Energy Review).

10. The Standing Group Chairman will be responsible for providing a verbal report on the Standing Groups progress with regards the issues raised above at each Amendments Panel Meeting. Furthermore, the Standing Group Chairman will be responsible for producing a Standing Group Report. The report should be submitted to the Panel Secretary by 8th August 2002 for circulation to Panel Members and the Conclusions of such report should be presented to the Amendments Panel meeting scheduled for 16th August 2002. The report should be written with reference to Section 8.18 of the CUSC.

11. It should be noted that, in accordance with Section 8 of the CUSC, the TASG itself, as a Standing Group under the Amendments Panel, is unable to propose an amendment to the CUSC.

Relationship with Amendments Panel

12. The TASG shall seek the views of the Amendments Panel before taking on any significant amount of work.

13. Where the TASG requires instruction, clarification or guidance from the Amendments Panel, particularly in relation to their Scope of Work, the Standing Group Chairman should contact the CUSC Panel Secretary.

Meetings

14. The Standing Group shall develop and adopt its own internal working procedures and provide a copy to the Panel Secretary.

Additions to the Terms of Reference - November 2002

Following consideration by the CUSC Panel of the assessment report for CUSC amendment proposal CAP043, it was agreed that the TASG terms of reference should be expanded to additionally cover consideration of:

- Treatment of trading sites and spilling suppliers,
- Information availability,
- Incentives to discourage breach and
- Compensation for withdrawal.

Appendix 2 – TASG Consultation and Responses, August/September 2002

The responses received were reviewed at the TASG meeting on 14th October. The responses can be seen on the NGC web site at:
http://www.nationalgrid.com/uk/indinfo/cusc/pdfs/TASG_Report_All_Comments.pdf

Given the seriousness of the topic, the overall number and depth of responses was quite limited. Nevertheless, responses were received from all parts of the industry, including large customer representatives. One of the purposes of the consultation was to elicit responses on the general thrust of the TASG work. No one suggested the TASG work should not be completed. The following themes emerged from the responses:

- Transmission Access had to be seen in the wider context of other market structural developments such as BETTA and changes to charging arrangements.
- Should Transmission Access be developed step by step, or as one large project? Will there be a wider, agreed, framework within which individual CUSC amendments will be progressed?
- The demand side models were, as yet, only sketches and needed 'beefing up'. The sketches are insufficient to allow adequate assessment of their worth.
- Customers, as well as other parties, wanted to be convinced that increased complexity of trading arrangements brought sufficient benefit to compensate. Complexity tended to favour suppliers in general and larger suppliers even more so.
- As well as complexity, there was concern to ensure the costs of change were out-weighed by the benefits. Reference to the Ofgem views on the need for change and their perception of the defects to be corrected would augment this area of the report.
- There was no consensus regarding the role proposed for DNOs in Case 1 of the demand-side models.
- It may be preferable to treat NHH and HH customers differently.
- There was no consensus on where the demand-side access rights should sit: customers, suppliers, DNOs, or even other third parties.
- Should generators have the option of seeking fixed duration/price access?
- The transmission access arrangements should demonstrably improve transmission system constraint management. (*Unambiguous measurement such an improvement would be difficult*)
- The final arrangements must fully deal with compensation for breach of arrangements by both the service supplier (NGC) and the party purchasing access (generator or demand).

Appendix 3 – TASG Criteria for assessment of Candidate Models

5 Fundamental Questions

1. How should rights be defined?
2. Who buys and sells and trades those rights?
3. What are the consequences of breaching those rights?
4. Who are the players and what are their contractual relationships?
5. How should NGC's investment decisions be driven, in relation to cost recovery or investment costs?

Criteria for Change of Transmission Access Arrangements (See Section 3 of February 2002 Ofgem Document)

[Please note the following is a subjective précis and interpretation of Ofgem's criteria. The reader is directed to the Ofgem document in order to reach his own conclusions as to Ofgem's criteria.] All acceptable changes to the arrangements imply superior performance against these criteria than the status quo.

1. Do the proposals improve the short-term efficiency of operation of the transmission system?
   - 1.1. Constraint and losses costs?
   - 1.2. Reduction of risks associated with failure of system?
   - 1.3. Choice in firmness of service required by attached party?
2. Do the proposals improve the long-term efficiency of investment in the transmission system?
   - 2.1. Improve incentives to network reinforcement?
   - 2.2. Improve incentives to network enhancement?
   - 2.3. Improve incentives to locate new generation/demand efficiently?
   - 2.4. Improve incentives to decommission inefficient generation?
3. Typical other criteria for change
   - 3.1. Is not unduly discriminatory to any class of user
   - 3.2. Gives benefits at least concomitant with any additional complexity and costs.

CUSC Applicable Objectives

- 1.1. The efficient discharge by the licensee of the obligations imposed upon it under the Act and by this licence; and
- 1.2. Facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the sale, distribution and purchase of electricity,

Appendix 4 – TASG Report of August 2002

The first report from the TASG to the CUSC Panel in August 2002 can be found on the NGC web site at:
http://www.nationalgrid.com/uk/indinfo/cusc/pdfs/TASG-Report.pdf
This report draws heavily on the contents of that report and seeks to develop to greater depth, some of the models introduced in the first report.

Appendix 5 – Template Contributions

This section (which is a separate document in order to emailing) contains the considerations of various parties using a template developed to check the consistency of the transmission connected generation model. The following templates are attached:

- Transmission-connected Generation- Strawman
- Interconnectors – Strawman
- Distribution - Strawman
- DNO Model assessment
- Demand-side Strawman