



**CONCLUSIONS REPORT  
TO THE AUTHORITY**

**Modification Proposal to the  
Use of System  
Charging Methodology**

**GB ECM-02**

**Negative Demand Tariffs**

30 September 2005

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## Executive summary

This report sets out National Grid's conclusions to the August 2005 charging consultation, GB ECM-02. GB ECM-02 covered modification of the Use of System Charging Methodology to manage negative demand tariffs that can occur from the DCLF ICRP TNUoS Transport and Tariff model.

Following consideration of the responses to GB ECM-02 and the relevant licence obligations in respect of the use of system charging methodology statement objectives, National Grid is proposing to amend the Statement of Use of System Charging Methodology on 1 November 2005 in the following manner:

- from 01 April 2007 the Transmission Network Use of System Revenue split between generation and demand be changed from 27/73 to 0/100 respectively; and
- the de-minimus level of £0/kW for half hourly metered demand and £0/kWh for Non Half Hourly metered demand be removed from 01 April 2007;

Analysis presented in the consultation indicated that even with the above changes to the generation and demand split that negative demand tariffs could occur at some point in the future. Based on the responses to GB ECM-02 National Grid has concluded that in principle the appropriate secondary measure to protect against this is that in negative demand tariff zones the liability for demand charges should be calculated on a wider charging base.

However, noting that there are some detailed stability and implementation issues that need further consideration and that there are IS implications for both Users and National Grid, National Grid has decided not to include this secondary aspect in the methodology at this time. We would however welcome the Authority's endorsement of the principle of the wider charging base as the correct secondary mechanism, subject to consultation on its implementation. National Grid intends to discuss the stability and implementation issues with the Industry in more detail prior to bringing forward a methodology change. National Grid proposes to use the Charging Issues Standing Group (CISG) as the forum to discuss the implementation issues. Initial discussion at CISG can commence following the Authority's decision on this methodology proposal.

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

[www.nationalgrid.com/uk/indinfo/charging/mn\\_modifications.html](http://www.nationalgrid.com/uk/indinfo/charging/mn_modifications.html)

## 1. BACKGROUND

In accordance with Licence Condition C4, the Authority included a number of conditions on National Grid as part of its final approval of the GB Use of System Charging Methodology. The first of these conditions (Condition 1) was to invite views and to consult on alternative methods of addressing the issue of negative demand tariffs and to bring forward proposals to modify the use of system charging methodology in this regard consistent with implementation in April 2006. This report contains the conclusions to a further consultation carried out by National Grid and proposes the changes to be included in the methodology statement from November 2005.

In May 2005 National Grid released a questionnaire to the industry to canvass views on a number of possible solutions to negative demand tariffs other than the approved de-minimus level. Following consideration of the responses National Grid issued a charging methodology modification consultation, GB ECM-02. This was issued on 3 August 2005 with responses requested by 31 August 2005. GB ECM-02 discussed the issues brought up in responses to the questionnaire and set out National Grid's proposed modification to the Use of System Charging Methodology.

In the consultation National Grid set out five possible options for dealing with negative demand tariffs and presented its views on an appropriate way forward. The consultation also included a summary of the responses to the May 2005 questionnaire. The consultation proposed that the Use of System Charging Methodology be changed to recover 100% of the Transmission Network Use of System Revenue from demand. The consultation also sought views on the appropriate implementation strategy and options for dealing with the future possibility of negative demand tariffs occurring again.

Triad charging provides incentives to parties to minimise demand at times of system peak. The Triad produces a charging liability based on the peak demand and the next two peak demands separated by at least 10 days either side of the largest peak demand<sup>1</sup>. The reduction in demand as a result of triad management reduces the overall need for infrastructure to meet peak demand. Although the peak demand is only measured over 3 half hours, because the time of the peaks is not known beforehand, the demand management needs to be sustained over a greater number of peaks to ensure the full benefit is gained. It is understood that Users need to generally manage demand over at least 20 forecast half hours to gain a reasonable degree of confidence that they will receive the full triad benefit.

When the transmission demand tariffs become negative the focus on Triad management of transmission charges provides signals that most Users and National Grid would consider inappropriate i.e. to increase demand or to reduce output of embedded generation at times of peak system demand. The effect of these signals is dependant on a number of factors, including the actual contractual arrangements between suppliers / embedded generators; the level of the negative demand tariff; and the energy price in any triad half hour that suppliers and generators are subject to. Overall, and supported through the questionnaire and consultation responses, the majority of respondents agreed with National Grid that these signals were inappropriate and that the methodology should not include them.

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<sup>1</sup> For more detailed explanation see The Statement of the Use of System Charging Methodology section 4.1

## **2. PROPOSED MODIFICATION**

### **Description of proposed modification to the Statement of Use of System Charging Methodology**

The current Statement of the Use of System Charging Methodology contains the principle that recovery of the Transmission Network Use of System Revenue is split between generation and demand in the ratio 27% to 73% respectively. GB ECM-02 proposed that the split be changed to 0% (generation) and 100% (demand) from 1 April 2007. Generation would still be subject to the locational tariff derived from the transport model with the tariff differentials maintained, but the charge setting mechanism would ensure the total revenue recovered from generation was zero.

The current Statement of the Use of System Charging Methodology also has a de-minimus level of £0/kW for Half Hourly metered demand and £0/kWh for Non Half Hourly metered demand. The original GB ECM-02 proposal would remove the de-minimus level from 01 April 2007.

### **Implementation date**

The implementation date for the proposed change is 1 November 2005 in the methodology. However, as indicated above and proposed in the consultation, the actual charges will not change until April 2007.

This timetable has been selected to allow adequate time for parties to take account of the change, as far as possible, in contractual relationships.

### **Proposed changes to the Statement of the Use of System Charging Methodology**

The proposed changes to the Statement of the Use of System Charging Methodology are provided in Appendix 1.

### **Impacts on other Industry Documents**

There are no impacts on other industry documents.

## **3. Consultation process**

Throughout the GB charging process the issue of negative demand tariffs was recognised. The options for managing the impact were discussed in a number of consultations. In this section we review those discussions right through to consultation GB ECM-02.

### **National Grid's 'Initial Thoughts' consultation: 16 December 2003**

In this consultation National Grid discussed the possibility that in the proposed form the GB TNUoS charging methodology could produce negative demand tariffs. National Grid indicated its concern that such negative tariffs would encourage inefficiencies in the affected areas, such as the perverse incentive of paying users to consume electricity at times of peak system demand. National Grid presented two options for avoiding negative demand tariffs: revising the overall split of generation and demand charges in the TNUoS model or allowing the TNUoS tariffs to be calculated normally and then overriding the values to a de-minimus level in the relevant zones.

### **National Grid's GB Charging Initial Methodologies Consultation: 8 April 2004**

In this consultation National Grid reiterated the concerns expressed in the initial thoughts consultation on negative demand tariffs. In addition National Grid provided an overview of Industry comments received on the 'initial thoughts' consultation and National Grid's response to these issues. In conclusion National Grid indicated its preferred solution, on the grounds of cost reflectivity, was to adjust the G/D split.

Extract from April 2004 GB Charging initial Methodologies Consultation<sup>2</sup>:

#### ***Industry comment***

*Six respondents agreed with National Grid that negative demand charges should be avoided, with one of the respondents noting that such charges would encourage inefficiencies. One respondent suggested that negative demand charges should be managed through the expansion constant and security factor, rather than by making an arbitrary redistribution. Two respondents preferred the option of altering the G/D split to avoid negative demand charges, as they felt that determining zero demand charges would be inappropriate and would distort the locational signals. One of the respondents who supported this option suggested it would have an additional benefit of moving toward harmonisation of transmission charges in line with Europe (where the G/D split of charges has G close to or equal to 0%).*

*One of the respondents preferred the second option of resetting negative demand charges to zero and then adjusting other demand tariffs to maintain the correct G/D split. The user explained its preference in relation to the potential introduction of a hydro benefit subsidy that could be levied on GB suppliers. The respondent felt that should such a subsidy charge be introduced, the second option for dealing with negative demand charges would soften the impact of the hydro subsidy charge on GB suppliers, whereas adjusting the G/D split would aggravate the impact. A further respondent suggested that all infrastructure costs should be recovered from demand in line with European discussions on this issue. The respondent suggested that it would be preferable for future changes to be incorporated within the GB transmission charging methodology to avoid having to undertake major charging reforms every few years. A further respondent commented that the potential for negative demand charges demonstrated the "illusory nature" of the signals that the ICRP methodology provides. The respondent believes that there is no justification for distorting the economic signals for one set of users and not for another. The respondent suggests a better way to resolve the problem would be to reduce the tariff differentials instead of reallocating costs.*

#### ***National Grid Response***

*National Grid agrees that negative demand tariffs would provide perverse incentives and should be avoided. National Grid does not believe that the presence of a slightly negative demand tariff in one or a small number of zones is likely to create a security of supply issue. However, to encourage demand use at the time of peak demand would be a perverse signal.*

*National Grid acknowledges the view that revising the G/D split such that all revenue is collected from demand in net terms may well be more in line with ongoing discussions in Europe. However, National Grid does not believe that it has the scope*

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<sup>2</sup> Sentences that relate only to the original consultation document have not been included in the extract

*within the development of GB charging arrangements to review the G/D split any further than would be required to ensure that all demand tariffs on a GB basis are positive. In such a case that we propose a revision to deal with negative demand tariffs, we may still seek a direction from Ofgem that such measures are appropriate.*

*One option for the treatment of negative demand tariffs would be to collar tariffs to demand customers at zero, whilst charging the cost reflective negative demand tariff to CVA (Central Volume Allocation) registered embedded generation. However, this would mean that CVA and SVA (Supplier Volume Allocation) registered embedded generation would be treated differently, distorting the signals provided to them dependent on their market participation. The treatment of embedded generation was changed in April 2003 through the use of system charging methodology modification UoSCM-M-07 in order to bring the charging arrangements for differently registered embedded generation in line. National Grid therefore believes that any change which would lead to CVA and SVA generation being treated differently would be a backward step, and could be discriminatory*

*National Grid agrees with the comments made that suggest that the locational differentials should not be distorted by artificially collaring demand tariffs at zero. National Grid believes that a more appropriate approach would be to address this issue through altering the G/D split, if required. In addition, National Grid believes that such a move would require a direction from Ofgem, rather than being changed through reference to one of National Grid's relevant licence objectives.*

#### **Proposed Methodology**

*National Grid believes that the most appropriate method of delivering positive demand tariffs would be to adjust the G/D split, if necessary, to retain cost reflective differentials.*

#### **National Grid's Final GB Charging Methodologies consultation: 20 August 2004**

This consultation highlighted that of the two scenarios proposed, National Grid's preferred scenario, Scenario B, resulted in negative demand tariffs. In order to remove these negative demand tariffs National Grid proposed that the G/D split be amended to 10/90 to avoid negative demand tariffs.

Extract from 20 August 2004 GB Transmission Charging: Final Methodologies Consultation:

*In its Initial Methodologies proposals, National Grid presented two options for avoiding negative demand charges, namely revising the overall split of generation and demand charges in the TNUoS model (currently set at 27/73 in E&W) or allowing the TNUoS tariffs to be calculated normally and then overriding the values to a de-minimus level in the relevant zones.*

*National Grid believed that the most appropriate method of delivering positive demand tariffs would be to adjust the G/D split, if necessary, to retain cost reflective differentials. The illustrative tariffs in the Initial Methodologies showed that for Scenario B a G/D split of 20:80 would be required.*

#### **Industry Comments**

*Of the 10 respondents who commented on the potential for negative demand tariffs, 9 confirmed their support for avoiding such charges on the grounds that they offered perverse signals to the market. However, there were mixed views on how this could be achieved and these are discussed in detail below.*

*One respondent supported National Grid's method of reapportioning the G/D split to remove negative demand charges, but stressed that a comfortable margin based on expected new generation should be applied to provide stability. A second respondent supported the application of the 20:80 split in G/D charges as better meeting the long term objective of the EU i.e. moving towards  $G=0$ . The same respondent saw the removal of negative demand charges as only being of secondary importance. Two more respondents also supported the change in the G/D split as bringing GB into line with common European practice and advocated the consideration of  $G = 0$  right away. However, they concede that this does not mean that individual generation charges are set to zero but would result in a range of positive and negative charges.*

*One respondent expressed concern that National Grid originally deemed changes to the G/D split as outside the scope of the consultation, then proposed it as a solution to negative demand charges. They would prefer the issue around the G/D split to be properly tackled with a defined and reasoned methodology.*

*Another respondent supported the phased reduction of the G/D split to remove negative demand charges as this would produce a coherent and predictable evolution of charges without compromising the cost-reflective methodology. They go on to stress that the alternative of capping would seriously undermine the principles of the charging methodologies.*

*One respondent stated that if Scenario B were truly cost-reflective then it would not result in negative demand charges and the G/D split would not have to be altered. However, they continue by stating that they do not support negative demand zones and would prefer a more robust methodology and wished for negative generation zones to be abolished too on the grounds of discrimination.*

*One respondent who has concerns of the stability of the charges if a change to the G/D split were implemented, points out that such changes would interact with the proposed rebate to Scottish small generators. This, they assert confirms their view that the issue of negative demand tariffs should be dealt with in the methodology itself rather than by fixing the symptoms.*

*One respondent who does not support the application of negative demand charges, uses their emergence to justify the removal of the multi-voltage expansion factor and locational security factor as this would provide a cushion before negative demand charges resulted from the model.*

### **National Grid Response**

*We note that there is widespread support for the removal of negative demand charges and for the initial proposed method of moving the G/D split to achieve this.*

*We are aware of the desire within the EU to harmonise tariffs within the next few years with a view to move towards  $G=0$  and we also note that the proposal moves the GB charges in the "right direction" However, any fundamental change to the G/D split with regard to EU tariff harmonisation will be handled outside this consultation and at a later date.*

*We acknowledge the comment concerning the issue of a robust methodology and the application to all negative zones be they generation or demand. The essential difference between generation and demand is that generation is generally more "elastic" compared with most demand. Whilst some industrial demand may be able to*

*respond to locational signals, the majority of demand (half hourly and non-half hourly) is inelastic and cannot respond in the same way that generation can.*

*National Grid has clearly stated its preference for not having negative demand zones even though they can be cost reflective, we continue to believe that negative generation zones give the correct cost reflective locational signal. For example, if all generation capacity moved from North to South there would be a significant reduction in transmission investment costs. We do not believe that a review of the underlying methodology to address negative demand charges is necessary, and we believe that adjusting the G/D split would be the appropriate action to take as this would retain the differentials for both generation and demand.*

*We accept that in changing the G/D split, the values used should ensure an appropriate tolerance is established so that it is not necessary to review the G/D split again over the next few years to address negative demand charges. In determining the G/D split, factors which influence the differentials and the absolute level of tariffs will need to be taken into account, such as changes to the revenue recovery and the inflation of the expansion factors. Against the backgrounds we have studied, we believe a G/D split of 10%/90% will be required.*

*Whilst European legislation governing tariff harmonisation is still at the drafting stage, indications are that convergence to average  $G=0$  will be required at some point. The change to the G/D split for Scenario B will be a move in that direction. Once the EU regulations are confirmed and understood, any further actions can be considered.*

#### **Proposed Final Methodology**

*In order to ensure demand tariffs are positive and remain positive for foreseeable changes in future years, by allowing a reasonable tolerance band around the demand charges, the G/D split has been altered for Scenario B to 10%/90%. The G/D split for Scenario A has not been changed and will be set to ensure the overall revenue split across G and D, across both TNUoS and connection charges is 25/75.*

#### **National Grid's GB Charging Methodologies**

#### **Conclusion Report to the Authority: 30 September 2004**

In this conclusion National Grid continued to put forward two options for the methodology. Scenario B, National Grid's preferred solution, caused negative demand tariffs. National Grid continued to indicate that these were not desirable, and that the appropriate solution was to amend the G/D split. On this basis National Grid did not propose any change to Scenario B which had a G/D of 10/90.

Extract from 30 September GB Transmission Charging: Final Methodologies Conclusion Report to the Authority:

*Nine respondents supported the proposal to prevent negative demand charges arising under Option B by revising the G/D split. Support was generally provided for reasons of avoiding a perverse incentive to consume at peak times on the system and a move to harmonise the G/D split with Europe.*

*Three respondents did not agree that the G/D split should be revised to prevent negative demand charges arising. One of these respondents suggested that negative demand charges should be allowed to occur in common with generation. Two of these respondents considered that a revised G/D split would skew the burden of charges toward demand users.*

Two respondents did not support a change to the G/D split without National Grid having first undertaken an industry wide charging methodology consultation on this specific issue. One of these respondents added that the proposed 10:90 split would not be cost reflective because it could reduce the incentive on generators to locate near to demand and possibly encourage demand Triad avoidance. Three respondents did not believe that National Grid had the authority to revise the G/D split and considered this to be a regulatory decision.

Three respondents suggested that the G/D split should be common to Scenarios A and B.

One respondent suggested that the G/D split should not be changed but rather a de-minimis level (i.e. zero) should be established for TNUoS demand charges to prevent negative demand charges.

One respondent noted the consequence of a revised G/D split in relation to the proposed Ofgem/DTI rebate for small generators of the residual element of the generation charge. This respondent considered that  $G=0$  may result in the rebate being negative.

Fourteen respondents expressed support for harmonisation with Europe of a 0/100 G/D split and generally noting that the current proposal, under option B, was a move toward that direction.

#### **National Grid Response**

We note the continued support of a majority of respondents for the removal of negative demand charges and that this should be achieved by moving the G/D split.

As outlined in the Final Methodologies consultation document, National Grid considers that a revised G/D split, under Option B, would prevent undesirable negative demand charges arising, as supported by the majority of respondents, whilst still retaining the differentials for both generation and demand. We do not support a de-minimis level for demand charges, as proposed by one respondent, since this could adversely skew tariff differentials. We do not believe that a charging consultation on the issue of the G/D split in isolation would be desirable or justifiable against our relevant licence objectives. However, we consider it appropriate to review the G/D split now as a result of negative demand charges. It would be for the Authority to decide whether such a proposal was consistent with our relevant licence objectives.

We do not agree with those respondents that argued the G/D split should have been commonly applied across Scenarios A and B. It was proposed as our preferred solution to the issue of negative demand charges and is therefore not commonly applicable.

We note the respondent's concern in respect of the Small Generators consultation by Ofgem / DTI, but also note that Ofgem are yet to confirm the actual size of the tariff reduction. We would advise that the tariff model does not allow the residual element to become negative since the model would adjust the MWkm to ensure a non-negative result.

National Grid notes that a significant number of respondents commented that the proposal under Option B could be a step toward harmonisation of the G/D split with Europe. We would remind respondents that European harmonisation was not the intent of our proposal and that this should not be seen to fetter a wider discussion of

*European tariff harmonisation as and when such developments occur within the electricity industry.*

*Following our review of the responses to the consultation, National Grid is not recommending any changes to the proposed final methodologies in this area.*

#### **Ofgem's Consultation and Impact Assessment: October 2004**

In October 2004 Ofgem consulted on 'The proposed transmission charging methodologies of the GB System Operator'.

In this consultation Ofgem noted that in the April 2004 proposals National Grid put forward a preferred option that with only 73 % of TNUoS being recovered from demand would result in negative demand tariffs. National Grid's preferred solution for dealing with the negative demand tariffs was by adjusting the G/D split. The proposed split being 10% recovery from generation and 90% recovery from demand.

At that time Ofgem welcomed views on National Grid's proposals and on alternative ways of addressing the issue of negative demands.

#### **GEMA's Decision on National Grid's proposed GB electricity transmission charging methodologies: December 2004.**

The Authority concluded that National Grid's proposal to increase the share of total revenue recovered from suppliers and large users under Option B to 90% (from the 73% share that applies today in England and Wales) was a disproportionate measure relative to the problem it was seeking to solve, i.e. negative demand tariffs in the North of Scotland. It was the Authority's view that the costs of this aspect of Option B were disproportionate to the benefits that might accrue from avoiding negative demand tariffs.

The Authority was not persuaded by the arguments that there is a problem to address with negative, but cost-reflective, demand side charging. The Authority considered that the aspect of Option B addressing the issue of negative demand tariffs (changing the G/D split) would place an additional burden on consumers. Whilst in the medium to long term the net effect on consumers might be expected to be zero, as wholesale prices adjust to reflect lower costs to generators, in the short term this aspect of Option B might be expected to result in a net increase in costs to customers.

In addition, the Authority was not persuaded that proper consideration had been given as to whether other changes, such as to the basis of charging, could be practically implemented to accommodate negative demand tariffs or whether alternative approaches to the issue had been considered. The Authority believed that alternative approaches could be effective in addressing the issue, and that such alternatives could be less burdensome on consumers.

The Authority invited National Grid to submit revised proposals by the end of January 2005.

#### **National Grid's GB Transmission Charging Use of System Charging Methodology Revised Proposals Consultation: 20 December 2004**

National Grid issued a further consultation that sought to address the issues the Authority had highlighted in their decision not to approve the Use of System Methodology.

This consultation proposed a number of changes to Scenario B. In respect of negative demand tariffs, National Grid reconsidered the implications of negative demand tariffs. National Grid continued to believe that negative demand tariffs created undesirable incentives. In addition to the earlier reasons National Grid highlighted the possibility that system security could be reduced. At this point under BETTA it was clear that a considerable amount of embedded generation would be treated as negative demand. This provided additional concern for National Grid, in that generation subject to negative demand tariffs would operate in a way that could lead to security problems i.e. reduce its output at system peak. National Grid reviewed the options for addressing the problem, noting that the Authority had rejected the proposed change to the G/D split as disproportionate, and particularly that in the short term that could have a negative impact on customers.

National Grid indicated that a solution that involved widening the charging base would have IS implications and would require changes to other industry documents. At that time in the BETTA process it would introduce additional risk to implement such a solution. In any event National Grid considered that a move away from the Triad would reduce the signals demand would be exposed to and could actually increase the demand seen by the system operator at peak.

Having considered the various options National Grid concluded that in order to retain the most cost reflective scenario (Scenario B) and to present a solution that dealt with the Authority's concerns, particularly to the possible short term impact on customers of changing the G/D split, that a de-minimus level for demand tariffs of £0kW and £0/kWh to manage negative demand tariffs was the appropriate solution.

Extract from December 2004 Use of System Charging Methodology Revised Proposals Consultation:

*The proposed move to a 27/73 G/D split in the GB charging methodology would however, create the possibility of negative demand tariffs in the North of Scotland.*

*The Authority was not convinced under the proposed Option B methodology that there was necessarily a problem to address with negative, but cost reflective, demand side charging. In the Authority's view, the issues highlighted by National Grid appeared to relate to the use of TRIAD charging i.e. charging on the demand at the three periods of system peak demand.*

*If negative demand tariffs exist then use of a TRIAD charging base would clearly focus the charge on a small number of half hours over the winter and create a greater incentive on demand to increase at times of expected system peak and also for embedded generation to suspend operation over these periods. We believe such an incentive is clearly undesirable from a system security perspective.*

*There are of course ways to address the security of supply concerns that would be presented by the existence of negative demand charges. One option would be to dilute the pricing signal by spreading the charging base over a wider period. In doing so however, this would make the charges less cost reflective as they would not be targeted on the cost drivers i.e. the system peak conditions. In terms of this aspect it would, therefore, require a judgement as to whether the loss of cost reflectivity could*

*be justified given the need to address the security of supply concerns and hence that the methodology would reflect the costs incurred as far as reasonably practicable.*

*For example, non half hourly metered demand in England and Wales uses the wider charging base of the daily energy consumption between 4pm and 7pm throughout the year.*

*A similar approach could be applied to the negative demand tariff charging base. There would still be a perverse incentive on generation and demand at times of system peak, but this pricing signal would be significantly diluted and hence potentially ineffective when the overall economics of taking demand are taken into account. Alternatively, to provide an absolute guarantee that all system security concerns are addressed, the negative tariff could be converted into a 24 hour commodity payment.*

*There would clearly be implications for our charging and billing systems to bear in mind when considering a negative demand charge with a revised charging base. Systems would need to be developed to accommodate the new type of charge and its charging base. Whilst at this time we believe we could have the necessary system changes in place, this would introduce a significant additional risk into the BETTA programme of works at a relatively late stage in the project's life.*

*In addition to the system security concerns associated with negative demand charges, the impact on embedded generation associated with demand charging must also be considered. Under the Option A and B proposals licence exempt embedded generation would be treated as negative demand and therefore receive a payment of the relevant demand tariff either directly or indirectly (assuming a positive TNUoS demand tariff). This payment would be made directly where the appropriate bilateral agreement is in place, or to the supplier responsible for the generation where the generation is not explicitly participating in the Balancing Mechanism.*

*Under the Option B proposals embedded generation would have expected to receive a payment, either directly or indirectly, of over £2/kW. If negative demand charges were implemented, this would change to a charge on the embedded generation, rather than a payment to the generator. This could have an impact on the contracting arrangements both between National Grid and embedded generation in Scotland, and also between suppliers and the embedded generators. We do not think that it is desirable to add this additional uncertainty into the decision making processes associated with the establishment of the GB contractual arrangements, at this critical time.*

*A further complication to consider with negative demand tariffs would be the requirement to change the Connection and Use of System Code to deal with the forecasting and reconciliation of any negative charge. Once the methodology was developed, the consequential amendment to the CUSC would be need to be drafted, which would then be subject to the CUSC amendment process.*

*Whilst we agree with the Authority that the system security issues with negative demand charges are a function of the charging base, we believe the wider concerns including the impact on contractual arrangements, and the practical implementation risks, justify the development of alternative options to avoid negative demand charges.*

### **Options to address negative demand charges**

*We note that the Authority did not believe that a change to the generation and demand split was a proportionate response to the problem of negative demand charges. Furthermore the Authority did not believe the approval of Option B, would protect the interest of GB electricity customers. In developing revised proposals to remove negative tariffs, we have therefore considered directly the proportionality of any proposals to the problem being addressed and the impact on end consumers.*

*Arbitrary “squeezing” of tariff differentials (such as scaling) to ensure they remain positive does not seem a proportionate response to the problem, as it would have a greater impact on users at the extremities of the GB system compared with those nearer the centre. Hence this could be seen as being unduly discriminatory across GB.*

*Another option to remove negative demand tariffs would be to merge the Scottish Hydro demand zone with the Scottish Power demand zone. This would result in a small reduction in the Scottish Power demand tariff, but would clearly constitute a cross subsidy between suppliers in the two zones and hence also be seen as unduly discriminatory across GB.*

*Our preferred option for dealing with negative demand charges would be to establish a minimum £0/kW demand tariff principle for a zone. The lowest a demand tariff could go is £0/kW (and 0p/kWh for the Non Half Hourly metered demand), and the excess revenue would then be divided non-locationally to reduce the tariff in all other demand zones equally and maintaining the overall G/D split.*

*The question is then how proportionate this methodology is compared to the problem it is seeking to address. Using the tariffs in Appendix 1 as a guide, this mechanism would reduce demand tariffs uniformly across GB (excluding Scottish Hydro) by up to 2p/kW. Whilst this could also be perceived as a cross-subsidy given the removal of the cost reflective negative signal, by spreading the effect non-locationally across all demand, the cost reflective differentials are maintained across GB, and the impact on the wider community of the measure is negligible. We believe that this is a proportionate response to the issue of negative demand tariffs, and would only have a very minor impact on end consumers.*

### **Longer Term solutions**

*We note that the Authority considered that in the medium to longer term the change to the G/D split under Option B would have a zero net effect on consumers, as wholesale prices would adjust to reflect the lower cost to generators. This raises the question as to whether any measure to deal with negative demand charges should be temporary, and that the option to change the G/D split could be seen as a viable longer term option. For example, it could be phased in over a number of years, to allow the fully cost reflective tariff differentials to operate unconstrained. For example, 5% steps could be adopted each year (7% in the first year), arriving at the 10/90 split in 2008/9.*

*Alternatively, the other longer term option might be to assess whether any changes to the charging base for potential negative demand zones would be an appropriate longer term solution if some of the challenges we have set out above could be addressed.*

*Such longer-term proposals would not effect the initial GB use of system charging methodology, and hence we would suggest they are considered separately post BETTA Go-Live.*

**National Grid's GB Transmission Charging  
Use of System Charging Methodology Revised Proposals  
Conclusion Report to the Authority: 28 January 2005**

National Grid proposed that the methodology be changed in accordance with its view in the 20 December 2005 consultation. That was that the G/D split should remain at 27/73 and the methodology include a de-minimus demand tariff of £0/kW and £0/kWh.

Extract from the 28 January 2005 report to the Authority:

***National Grid Proposal***

*National Grid proposed to adopt a 27%/73% split of total revenue recovered from TNUoS tariffs between generation and demand. This is in line with the existing revenue division implemented in the current England and Wales methodology.*

*The proposed reversion to a 27%/73% G/D split created the possibility of negative demand charges in Scotland. National Grid concluded that system security issues and wider concerns with the implementation of negative demand tariffs justified that they should be removed. National Grid therefore proposed to establish a minimum £0/kW demand tariff principle for a zone.*

*For the avoidance of doubt, National Grid's proposal ensured that the lowest demand tariffs can go is £0/kW (and £0/kWh for the Non Half Hourly metered demand). The excess revenue would then be divided non-locationally to reduce the tariff by a unit amount in all other demand zones thereby maintaining the overall G/D split.*

*We argued that the proposed solution, chosen from a number of alternatives, all of which displayed some element of non-cost reflectivity, had a minimal impact on cost reflectivity. In this way, we argued it was a proportionate response to the problem it was seeking to address given that only c. £1m of revenue was potentially involved for this issue.*

**Ofgem's Impact Assessment on the proposed transmission use of system charging methodology of the GB system operator: February 2005**

Within this impact assessment Ofgem expressed the following views:

*In the decision document which the Authority published on 10 December 2004 on this issue, the Authority considered that it was the combination of Triad charges and negative demand charges that created the potential for perverse incentives, not negative demand charges in themselves. In this context, the Authority was not persuaded that NGC had given due consideration to alternative ways of addressing this issue, and that the method proposed by National Grid (increasing the proportion of revenues recovered from demand) was not a proportionate response. The constraint on demand charges has been proposed by NGC within this context, and recognising potential time constraints in progressing other ways of addressing this issue in timescales relevant to BETTA go live.*

*If the unconstrained tariffs derived from the methodology are cost-reflective, then the impact of the constraint would be to reduce the degree of cost-reflectivity of the methodology. The materiality of this distortion would depend on the size of the difference between the constrained and unconstrained tariffs.*

*The impact of the constraint that demand charges must be non-negative is for demand charges in the north of Scotland to be slightly higher than would otherwise be the case, and for tariffs in all other demand zones to be slightly lower than would be the case in the absence of the constraint.*

### **GEMA's Decision on National Grid's proposed GB electricity transmission use of system charging methodology: March 2005**

In March 2005 the Authority approved National Grid's proposed TNUoS methodology as submitted on the 28 January 2005. Along with this approval the Authority also attached a number of conditions. Condition 1 was related to negative demand tariffs. This condition required National Grid to seek views and consult on alternative methods of addressing the issue of negative demand tariffs. As part of this National Grid was required to bring forwards changes by April 2006.

### **National Grid's May 2005 Industry Questionnaire**

Following discussion at the Transmission Charging Methodologies Forum in April 2005 National Grid released a questionnaire that sought views on the potential solutions for dealing with negative demand tariffs and what the corresponding impact of these solutions may be. The questionnaire proposed five solutions:

- 1) Allow negative demand tariffs with existing charging bases
- 2) Allow negative demand tariffs, but with a wider charging base for HH demand
- 3) Allow negative demand tariffs with a full commoditised charging base
- 4) Removal of negative demand tariffs by "squeezing" differentials
- 5) Removal of negative demand tariffs by altering the G/D split

Within option 5 above National Grid noted there were a number of sub-options. The questionnaire also sought any views on any other alternative options.

The non-confidential responses to this questionnaire are available on National Grid's industry information web site. One response was marked as confidential. These responses were used to inform National Grid's development of the formal proposal for consultation.

### **National Grid's GB ECM-02 Modification Proposal to the Use of System Charging Methodology - Negative Demand Tariffs: 3 August 2005**

Having carefully considered the comments in the Authority's decision document and the comments received in response to the questionnaire National Grid proposed the following changes in GB ECM-02:

- that references to the de-minimus demand charge of £0/kW and 0p/kWh would be removed;
- from April 2007 the G/D split would change to 0/100 rather than 27/73; and
- the definition of a secondary mechanism adopting a wider charging base to provide robustness against the future emergence of negative demand tariffs: Suppliers in demand zones with a negative half hourly zonal tariff (£/kW) would all be subject to the charges in line with non-half hourly demand (p/kWh) arrangements for that zone.

The consultation provided a summary of the views expressed in the questionnaire responses for each of the 5 options along with National Grid's detailed thoughts. The

consultation also sought additional views on any interim solution along with phasing and implementation issues.

Excluding a suggestion that lay somewhere between options 1 and 2 above the only other solution suggested in response to the questionnaire was that the existing de-minimus demand tariff of £0/kW be retained. Due to the wording of the Authority condition on negative demand tariffs, National Grid concluded that this additional alternative was not a valid option i.e. National Grid was required to bring forward a change to the existing methodology.

This consultation was issued on the 3 August 2003 and responses were requested by 31 August 2005. A copy of the consultation GB ECM-02 is attached as Appendix 2 to this report.

### **Summary of process**

From reviewing the process above it can be seen that National Grid has consulted extensively on this issue. CUSC parties have been given the opportunity to comment on this issue in several consultations over a number of years.

Throughout this period National Grid's central position has been that it believed that a change to the G/D split was the solution that best met all of the relevant objectives. In each consultation National Grid has addressed the many issues that respondents have raised. In general, most respondents to National Grid consultations have consistently supported the view that a system peak signal from negative demand tariffs was inappropriate. In addition, that adjusting the G/D split represented the optimum solution that best fitted all of the relevant objectives on National Grid.

In the post BETTA stages of this process respondents were given the opportunity to bring forward other suggested alternatives through the questionnaire process. The latter consultation and questionnaire also allowed CUSC parties to comment on options introduced later on in the GB consultation process, principally, widening the charging base in negative demand zones (removing triad charging). Against these options the majority of respondents to the questionnaire and consultation GB ECM-02 continued to indicate adjusting the G/D split as the optimum solution.

## **4. Responses to the consultation**

National Grid received 18 responses to the GB ECM-02 consultation. A copy of the responses is attached as Appendix 3 to this report. There were no confidential responses.

In this section we review the responses and address the issues raised in them. Finally, we provide National Grid's view on each of the options having considered the responses to the GB ECM-02 consultation and the issues and responses raised by all parties throughout the whole process of developing the GB charging methodologies.

### **Summary of responses to GB ECM-02**

The majority of respondents supported National Grid's conclusion that negative demand tariffs would produce undesirable effects and that to avoid this the methodology should be changed to remove the possibility of negative demand tariffs.

In addition the majority of respondents were in favour of the proposed change to the G/D split to 0/100 in the methodology. However those in favour were divided as to the implementation date and the need for phasing. A significant number of respondents indicated that the change should be implemented from April 2006, although others indicated a longer implementation timescale of up to three years would be more appropriate.

In general the respondents were not in favour of introducing a wider charging base for the period April 2006 to March 2007 should the change to the G/D split be implemented as proposed in April 2007. A significant number of those indicated that the collar should be retained for this period as the most efficient option. A number of other respondents indicated the collar should have also been considered as the enduring solution.

Thirteen respondents supported the move to a G/D split of 0/100. The main reasons provided in the responses were that negative demand tariffs must be avoided, however charges should continue to be peak based and be as cost reflective as possible. Five respondents did not support the move to amend the G/D split. Of these, one indicated that more work was required to investigate if cost signals on demand were effective, and that if the G/D split is amended then it should be delayed for 3 years.

Respondents opposed to National Grid's proposals believed that the problem had been overstated by National Grid and that the proposals were self-serving for generation. Indeed the remedy was worse than the disease itself. Two respondents did not believe National Grid's proposed solution better facilitated the relevant objectives and in particular it did not result in more cost reflective charges or facilitate competition. These respondents believed the present arrangement for 2005/6 (the deminimus level) 'is the only sensible option to proceed for future years'.

One respondent believed that charging all TNUoS to demand National Grid is not following its obligation under Condition C7 under the transmission Licence to ensure that it does not unduly discriminate between classes of customers.

Respondents not in favour of National Grid's proposed solution did not believe that the savings in generation cost would be passed through to suppliers. The respondents suggested that a more equitable solution would be to reduce the differential for demand, indicating that the current differential was overstated or retain the collar. These respondents did not support the premise that negative demand tariffs are likely to have a significant influence over usage at times of system peak demand.

### **National Grid's response to the issues raised in GB ECM-02**

National Grid agrees with the majority of respondents who maintain that negative demand tariffs would have undesirable effects. National Grid also agree with those respondents, for the reason provided below, that amending the split of generation and demand TNUoS revenue recovery is the most appropriate way of addressing this issue.

National Grid notes the concern that implementation of a G/D split change may be costly and that timing of the change can be used to mitigate the effects. We also note the view from many other respondents that the change should take place sooner than proposed. National Grid has considered the cost of implementation. The G/D split is the least cost option for all parties in terms of IS developments. However, we

recognise the G/D split can involve suppliers having to reopen contracts. This of course has to be balanced against the benefits of removing the de-minimus level of demand tariffs and hence improving the cost reflectivity of the tariffs. This was one of the reasons that National Grid continues to propose that the implementation be delayed until April 2007. We believe that delaying the implementation by more than a year cannot be justified in terms of cost reflectivity, however the delay of a year is reasonable to mitigate a proportion of the implementation costs. This delay may also aid the TNUoS reduction for generators being efficiently passed through to suppliers in the form of lower energy prices.

A respondent expressed the view that the problem of negative demand tariffs was symptomatic of the signals being produced from the methodology. The respondent believed that there were issues relating to the connection of significant amounts of renewable generation. This had different cost drivers to conventional plant and should be given consideration in the methodology. Another respondent indicated generation does use the system and this must result in costs.

National Grid maintains that the differentials derived from the transport and tariff model represent the costs imposed on the transmission system for any increase or decrease in generation / demand. The level of differential and hence signals are based on a quantitative assessment of infrastructure costs and system security requirements. Therefore we see no basis that demand should not be exposed to the full cost reflective signal. The signal provides an incentive to efficiently locate or manage generation and demand at times that drive system investments, and hence ensures efficient investment in the transmission system. Generation and demand are equally exposed to signals that are derived from a common model and based on common factors and therefore National Grid do not believe that the methodology unduly discriminates against any class of customer. Cost reflectivity is provided through the differentials that are derived from the methodology and the relative proportions of G or D contribution do not effect these signals.

In order for customers to be satisfied that prices are as efficient as possible they need to be satisfied that a generation is exposed to efficient signals that are result of the decisions they make e.g. location. Within the methodology this signal is achieved through the differentials in the tariffs. The G/D split effectively defines a national balancing point i.e. that location on the system where generators are assumed to give title to suppliers. This could be at the centre of generation giving a 0/100 G/D split or at the centre of demand that giving a 100/0 G/D split. In the same way other goods can be supplied at the producers factory gate or at the purchasers premises. Given that cost reflective differentials can be established irrespective of the G/D split National Grid does not believe that adjusting the particular G/D split reduces cost reflectiveness or discriminates between classes of customer.

The respondent also noted that there are transparency issues in terms of renewables. In the context of this consultation the main issue would appear to be that embedded renewables are not subject to the generation tariff, but can receive the demand tariff. Therefore adjusting the G/D split increases the embedded benefits. National Grid believes that it is correct that Users are exposed to the cost they impose on the system. We consider the issue of distribution and transmission charging interaction and the possible misalignment of incentives as a separate issue to the G/D split. We understand that Ofgem are planning to consult in this area, and we are also considering this matter in line with our relevant licence obligations to keep the charging methodologies under constant review. Any change to the commercial arrangements which continues to treat embedded generation in a non-discriminatory manner is unlikely to be straightforward. National Grid will deal with

the charging implications of that work at the appropriate time in the future in accordance with the relevant governance framework.

The respondent expressed the view that a significant proportion of demand could not respond to the cost signals being provided. Also that there is a point where demand can no longer respond and therefore increasing the signal is meaningless. To address these issues the respondent suggests considerable work is required to investigate the usefulness of signals to demand.

National Grid believes there are two aspects to this issue. Firstly, the issues of the absolute cost of the generation or demand charge (the residual element) does not provide a sighting signal, as it is not locational. The proposed change adjusts only this flat element of the charge. The locational differential (the difference between zonal charges) is directly related to the cost imposed on the transmission system. We do not believe arbitrary adjustment to make the locational signal more effective and possibly encourage new development in demand management or reduction to remove a signal that users arguably ignore would be cost reflective and improve the methodology.

The respondent also commented that Triad management allowed parties to avoid paying for the transmission system, and that as there was no commitment there was a probability that they could use the system at peak. We note this point, but would point out that if the party did use the system at peak it would not be Triad managing and would incur the relevant cost reflective charge derived from the methodology. The TNUoS aspect of the Use of System Methodology is concerned with providing the appropriate signal. We continue to believe it is correct to provide Triad benefits to users who manage their demand and hence reduce the need for infrastructure investment.

We note the concerns that the respondent expressed that changes to the G/D split could be viewed as a cross subsidy for vertically integrated organisations. We note that the respondent believed this could be mitigated by delaying the introduction by three years. We do not see the connection between the three year contract issue, as discussed earlier and the potential that the G/D split could be construed as a cross subsidy if changed within that timescale. We also note the response from a small independent generator that believed adjusting the G/D split to 0/100 improved competition in the generation sector, allowing smaller independent generators to compete on an equal basis to larger vertically integrated generators.

A number of respondents rejected National Grid's belief that negative demand tariffs were a problem and suggested the remedy was disproportionate. National Grid continues to believe that the demand response provided through Triad charging not only incentivises efficient investment in transmission, but will also have an influence on the overall level of demand supplied by the transmission system at peak times. Negative demand tariffs would upset these signals, resulting in reducing the level of response and incentives for Users to maximise demand at times of peak. We accept that this would of course be limited by the energy price over the forecast triad periods, but there appears to be a clear indication that demand response would reduce and demand may even increase. Even more of concern to National Grid is the potential signals that this provides to embedded generation at times of peak. The volume of embedded is generally expected to increase, and in particular, the zones where negative demand tariffs are likely to occur are where there is intense activity in terms of renewable generation. Although it can be argued that a significant proportion of demand may be inelastic (however responses to the questionnaire indicated users would increase demand) it is likely that embedded generation is

much more capable of responding to short term price signals, and in particular to reduce generation.

We have discussed earlier in this conclusion the issue of proportionality, and we remain concerned that this issue has been significantly overstated by some respondents. National Grid maintains that the proposed change will not result in a windfall gain to generation. A large amount of generation is operated by vertically integrated generation and supplier companies who will see no net change in their positions. Furthermore, the generation that belongs to other parties already has to compete against the larger vertically integrated companies and so should pass the cost savings through.

A respondent noted that a change in the G/D split to 0/100 increase the residual element in demand by approximately £5/kW, and that the charge in 2003/4 was £0.58/kW. The respondent suggested that National Grid was indicating that the cost of incremental capacity had increased 20 fold and that these charges were not cost reflective. Other respondents also supported the view that the proposed change was not cost reflective and were concerned about the increases their TNUoS costs. National Grid points out that during this period the methodology has undergone several significant improvements. In particular, a large proportion of this increase is accounted for by a reduction in connection charges for generation and demand customers directly connected to the transmission system. Also the overall effect of BETTA increased the residual element of the charge, and this allowed customers to benefit from a larger competitive market. Both of these developments were separately consulted on and approved in accordance with the relevant objectives. The £5/kW increase is the indicative increase suggested in the consultation. We note that this forms the residual element that all demand users, other than those who Triad manage, are subject to. Therefore this cost is not locational and National Grid does not therefore suggest that the incremental cost of capacity at every node on the system for demand has increased by £5/kW. National Grid continues to believe that given competition in the generation sector that these 'costs' should filter through to corresponding reductions in the energy prices. Even when taking account of vertically integrated players, we do not believe that customers will end up funding a windfall gain for generation.

In response to one respondent's comment, National Grid is not suggesting that there is 'no competition in generation or that demand is perfectly inelastic'. The proposed change to the G/D split is implemented by altering the residual element of the charge and therefore all users, apart from those who avoid TNUoS, are equally affected. On this basis the relative differential in either generation or demand is retained and therefore the full cost reflectivity derived from the transport and tariff model is applied. Another respondent also indicated that there was not sufficient liquidity in the market to ensure that the reduction in charges to generators would be passed through to customers.

The competition between generators should not be affected by this change, apart from as previously pointed out that smaller independent generators have indicated they will be more able to compete with larger vertically integrated players on a level basis, hence improving competition. This is based on the view that larger vertically integrated players can easily pass through the Generation TNUoS charges at the moment.

On the later point about the cost pass through with vertically integrated players, we reiterate that this would imply that a large number of Users are already subject to the

full cost and therefore the proposed change to the G/D split will have minimal impact on customers.

In addition, we believe demand does respond to pricing signals, as seen through Triad response and respondents views about retaining Triad. However, given that the majority of demand is not half hourly metered, and hence cannot be directly exposed to transmission charges in such an explicit manner, their behaviour is more likely to be influenced by the actual energy prices they are exposed to. National Grid continues to believe that a competitive market would tend to respond accordingly and hence the overall cost non half hourly users are exposed to would not increase.

We reject the comments that National Grid 'proceeds to dismiss blithely' the concerns about the proportional response'. Throughout each GB consultation and in particular GB ECM-02 National Grid has put forward what it understood was the impact on customers. National Grid's understanding and conclusions have been supported by the majority of respondents to each of these consultations and particularly those to GB ECM-02. National Grid has extensively consulted on this issue and put forward detailed discussion, particularly in GB ECM-02, about the problems and merits of each option. National Grid has been clear in indicating which option and why such an option should form the preferred proposal. National Grid's view has consistently been backed up by responses to consultations. As stated previously, considering the position of vertically integrated players and smaller independent generators National Grid do not believe there will be a detrimental effect on customers, especially with the delayed implementation until April 2007.

National Grid accepts that there is no legal requirement to harmonise G/D charges with Europe at the current time. However, National Grid and the majority of respondents believe there is a very real possibility that in the future there will be increased pressure to have common arrangements throughout Europe. This belief in itself creates uncertainty in the charging environment that does not help to facilitate competition. For this reason we believe that removing the uncertainty by adjusting the G/D split to be more consistent with Europe reduces uncertainty and hence improves competition. In addition parties within GB are already trading with counterparties in Europe who have different charging arrangements. These differences may constrain competition between all generation and demand. Harmonising the arrangements will serve to reduce discrimination and remove cross subsidies and hence better facilitate competition.

National Grid does not believe that adjusting the G/D split will increase the uncertainty of charges on suppliers, indeed we believe the direct charge will increase certainty and improve transparency. The overall cost to customers should not be affected. Respondents have already indicated that large players pass the cost through, so their charges should not change, and smaller parties should benefit from reduced charges for energy as smaller generators are more able to actively compete with larger parties.

A number of respondents indicated that the change to the G/D split as proposed would result in an overall increase in charges to consumers i.e. that the benefit would not be passed through. The evidence provided in support of this view was that the change to the connection charging boundary in England and Wales (known as 'Plugs') on average resulted in generators receiving an overall reduction in charges, but there was no reduction in energy prices over the same period. In response National Grid notes that the transmission charges are only one element of cost that generators are faced with and overall makes up a relatively small proportion of the final energy price. During the period Plugs was developed, consulted on, and

implemented, generators and suppliers would have made various assumptions about the likelihood of its implementation and impact. In any event the point at which Plugs was fully factored into prices would have been approximately the time the methodology was agreed, not when implemented. Given that transmission charges make up a relatively small proportion of the energy cost it is very difficult to see how any changes in the charging structure actually impact on energy prices at any specific moment in time. Against this there are many other energy and financial issues that could influence the energy prices over a period of time, particularly important would be the cost of the primary fuel that at this time was increasing. National Grid has reviewed the forward curve from the period July 03 through to March 04 affecting the period April 04 and Summer / Autumn 04 when Plugs was agreed and introduced. This shows an underlying trend of increasing prices, however there is a clearly identifiable drop in prices for April 04 and Summer / Autumn 04 at the time the Plugs methodology was approved in November 03 and in February 04 when the final charges were published. Whilst National Grid does not claim that these changes are as a direct result of Plugs implementation, they do not support the view that the Plugs cost reductions for generators were not passed through.

We accept that many factors in the market could interact to influence energy prices. On this understanding we do not think it reasonable to draw the conclusion that any benefits that generators gained through plugs were not passed through based on energy prices.

We do not agree that a more equitable solution would be to reduce the differentials within the demand tariff. This would reduce the cost reflective signals for demand by different degrees depending on location, and would be arbitrary. The level of reduction would be dictated by the aim to remove negative demand tariffs alone and therefore the differential would not be led by any particular cost driver. However we do agree, if this were the appropriate solution (with all other more cost reflective options ruled out), that there may be merit in considering limiting the squeezing to demand differentials. Such consideration would need to assess the impact on embedded generation exposed to negative demand tariff payments.

We note that the negative demand tariff arises from the differentials combined with the level of the flat residual component of the tariff. We do not agree that the differential is too large and we maintain that if the differential was reduced this would provide a less cost reflective tariff in the same way as reducing the cost of 400kV build in the model. This less cost reflective tariff could result in inefficient transmission reinforcement increasing the cost ultimately borne by customers.

We note this respondent's preferred solution is to alter the charging base but as noted by another respondent this could be discriminatory unless applied to all users. Applied in such a way this could result in less Triad response and therefore increasing the costs to Users. Overall, option 2 would dampen the cost reflective signal applied to Users and could therefore result in additional inefficient transmission investment.

We note the concerns expressed about the implementation costs of adjusting the charging base and also that if carried out for April 2006 in addition to changing the G/D split in the following year, that this could be viewed as inefficient. A number of respondents suggested that in order to cover the period 2006/7 that the proposed change to G/D split should be brought forward. We believe that delaying the implementation of the G/D split by one year, whilst not as long as suggested by some respondents, is a reasonable balance between cost reflectivity and the suggested

implication of changing the tariffs in the shorter term. In particular it would reduce the burden on suppliers when managing their contracts.

We agree with the majority of respondents who stated that adjusting the G/D split was the most appropriate solution. Respondents noted a considerable number of benefits to National Grid's proposed solution, these included:

- It retains the full differential and so most cost reflective signals,
- It enhances embedded benefits,
- Greater harmonisation with Europe improves competition,
- Most consistent with charging objectives,
- Arguably the split should be 0/100, on either side and it was not unreasonable for cost to fall on suppliers,
- Strengthens the need for Triad management,
- Sharpens the incentive on demand who can better manage load over peaks,
- Maintains the incentive for embedded generation to be available at system peak,
- Puts smaller generation on the same footing as larger generators and so improves competition.

A number of respondents suggested that the collar should be maintained. In addition several suggested it be retained for the period 2006/7 and into the future as a secondary measure. National Grid did not propose the collar as the longer-term solution mainly on the basis that it was not the most cost reflective solution. In addition given our understanding of the charging condition placed on us, continuing with the current methodology unchanged is not an option. If the Authority believed the collar was a viable long term solution, they would not have placed a condition on National Grid to propose its replacement.

We have further reviewed the use of the collar on the grounds of cost benefit, the benefit of stability and simplicity. Following this we conclude and agree with the respondents who have suggested that the collar should be retained in the interim period. This avoids embarking on costly IS developments that would have limited short-term value. Therefore National Grid intend to retain the collar until the G/D split is amended in April 2007. We have discussed the interpretation of Condition 1 with Ofgem as we are conscious that whilst we are confirming the future methodology by April 2006, we are not proposing a change to the charges from April 2006. We are comfortable that having consulted properly on the issues, that we have met the intention of the charging condition.

In terms of providing future robustness a secondary mechanism is needed within the methodology to deal with any future emergence of negative demand tariffs, even with the change to the G/D split to 0/100. We continue to believe a solution that involves a wider charging base (option 2) is preferable as a secondary measure. Given that following the change to the G/D split to 0/100 in April 2007 it is unlikely that negative demands will occur for a number of years, National Grid do not intend to include the details of a secondary measure in the methodology at this time. It should be noted however that future developments including the conclusion of the work to review the cost of providing incremental capacity might affect the temporal proximity of negative demand tariffs. Noting the concerns raised in connection with implementing option 2 we intend to consult further with the industry, once a decision has been reached on GB ECM-02, on the most efficient arrangements and the most cost effective implementation strategy of introducing a wider charging base for negative tariff zones.

Whilst we are not proposing option 2 as part of the methodology at this time, we would welcome the Authority's endorsement in principle of this approach as a basis for a second stage solution. A clear indication of the Authority's view of option 2 at this time will allow any future consultation to concentrate on the detail of the implementation.

### **National Grid's view of the options**

In addition to better meeting the charging principles in the licence, National Grid believe it is important that:

1. The solution does not encourage embedded generation to shut down at times of peak system demand;
2. The solution does not encourage customers to increase demand at times of peak system demand;
3. The solution protects cost reflectivity, as far as possible;
4. The solution maintains inter-zonal signals i.e. a zone being more or less expensive than the adjacent zones;
5. The solution is proportionate to the issue being addressed;
6. The solution should not be overly complex, and any increase in complexity must show a clear benefit;
7. The cost of implementing new charging arrangements should not outweigh the benefit of an option compared to alternatives; and
8. Where possible the positive signal to Triad manage is retained.

The DCLF ICRP model produces tariff differentials and it is these combined with the 'sharpness' of the Triad mechanism that provides cost reflectivity. For example, reducing the tariff differentials weakens the incentive for demand to site in the north and similarly weakens the disincentive to site in the south. In addition, providing the demand tariffs are positive, all demand or embedded generation, in the north and south, are incentivised to reduce the demand 'seen' by the transmission system over forecast Triad periods. This 'seen' demand feeds through to future transmission investment plans.

National Grid maintains that it is the differential rather than the absolute cost that provides cost reflectivity. The absolute cost will change as a result of 'shifting' the differential up or down in order to ensure the correct amount of revenue is recovered. All generators or suppliers will seek to recover their costs from the end customer. So, in theory, given effective competition and liquidity in the energy market, the non-locational element in the TNUoS charge should be recoverable equally by all parties irrespective of location or whether it is originally levied on generation or demand. For demand that Triad manages this represents an additional benefit in that the market price of energy should not include the residual element of TNUoS applied to generation.

When all demand zones are positive, all embedded generators benefit to a greater or lesser extent depending on their location and contractual relationships. The absolute benefit is in line with the differential, providing a larger benefit in the south. However, when demand tariffs become negative (i.e. flip) rather than receiving a benefit to avoid demand take (reduce demand or increase embedded generation), the signal flips to increase demand and reduce embedded generation (maximise metered demand to maximise the benefit). National Grid believes this negative demand charge signal could have a detrimental impact on security of supply - increasing the demand required to meet at peak. Also, the costs of generating in a negative demand zone at suspected Triad peaks would be dominated by the lost benefit of Triad

avoidance. Under a tight margin this TNUoS avoidance could have an undue influence on the marginal price in the market. The embedded generation affected would not be Balancing Mechanism plant, nor have any contractual relationship with National Grid, and hence not readily available to National Grid in the short term (i.e. to be re-despatched to meet increased demand).

To avoid the negative consequences on security of supply National Grid believes it is essential to remove the inappropriate signal generated by the combination of negative demand tariffs and the Triad mechanism. However, we also believe it is very important to maintain, to the greatest extent possible, the full differential derived from the transport and tariff model to provide cost reflective charges.

Of the options discussed for dealing with negative demand tariffs National Grid believes that adjusting the proportion of revenue collected between generation and demand (the G/D split), to remove negative tariffs, but retain the full cost reflective signal, is, on balance, the most appropriate solution. Three other affects of this solution are that it produces more negative generation zones in the south, it increases the small generation discount by approximately 25% and enhances embedded benefits. Increasing the amount paid by demand clearly increases the available Triad benefit. It also increases the absolute differential between the demand and generation tariff as a result of the larger charging base for generation compared with demand (i.e. shifting revenue from G to D has a bigger £/kW effect on demand as the revenue is prorated across less megawatts).

An additional benefit, also noted by many of the respondents to the questionnaire, is that it moves GB charging arrangements towards a G/D split of 0/100 which is more in line with the rest of Europe. Respondents are aware of the position in Europe and this may be causing uncertainty that they need to manage. Uncertainty in future arrangements will manifest itself as risk and hence a premium in the cost. In terms of risks associated with transmission charges these would normally develop as consultations appear and be fully implemented in contract values when either the methodology is approved (or not vetoed) or the statement is published. Moving towards the European norm in a clear and planned manner should reduce uncertainty and seek to ensure that generation in GB is competing with European generation in Europe and GB on a more consistent playing field.

Whilst the change to the G/D split is on balance our preferred solution to negative demand tariffs, there are a number of additional issues to consider including how to deal with any negative tariffs if the effect of the G/D change is exhausted. These are discussed below alongside our views on each of the options considered.

In the Authority's rejection of National Grid's original proposals the issue of proportionality was highlighted as a concern. National Grid understands that all costs are eventually borne by the consumer. Providing the market allows the change in revenue streams to pass through there should be no additional impact on customers. National Grid is proposing an implementation date that ensures parties have sufficient time to incorporate changes into contractual arrangements. In addition, moving the G/D split in one step would also reduce the risk of the change being lost amongst other changes.

**Option 1:** Allow negative demand tariffs, but retain the existing charging base

Given the inappropriate signals discussed above (to increase demand and reduce generation at peak in negative demand charging zones) National Grid believe the

methodology should avoid negative demand tariffs in conjunction with the existing Triad mechanism. Therefore National Grid does not support Option 1.

To put the implications in perspective, if the Triad effect was 2% then the demand increase in the north of Scotland is only likely to be 30MW. However, in addition to this the transmission system demand will include embedded generation turning down. The demand effect could be considered small but still appreciable, but with the predicted increase in embedded generation the overall effect could become a significant factor in system security. Also, as the system changes there is the real potential for more zones to become negative, increasing the size of the problem.

This also has an effect on stability of the charges and customer processes. When zones 'flip' to the negative charging arrangements not only do the level and sign of the charges change, but it brings about distinctly different real time practices.

**Option 2:** Negative tariffs, with a wider charging bases (similar basis to Non Half Hourly)

Option 2 allows negative demand tariffs, but adjusts the charging base (only in the negative zones) to reduce the effect of inappropriate signals. This is a significant change to the existing methodology and adds another level of complexity on the basis that the revised methodology only applies to negative demand zones and other charging arrangements remain in place.

From the responses to the questionnaire it appears that some of the respondents did not fully appreciate that the change to the charging base was limited to the negative zone. This point was explicitly covered in the consultation.

It is arguable whether this option completely removes the incentive to increase demand, the effect is obviously much more dependant on the energy price, however, it fails to give the sharpest signal for demand management at peak. Given sufficient liquidity in the energy market the energy price should be sufficient to encourage generation to run or for demand to reduce appropriately i.e. TNUoS charges do not dominate.

This option does have IS implications for National Grid. Industry participants have indicated they would also have costs. These cost have to be weighed against the incremental benefits of this solution over the other options.

As the charging base widens the charges move away from a capacity based charge (kW) towards a commodity (kWh) charge. This approach is not entirely consistent with previous analysis that indicated National Grid invests in capacity for peak system demand and so the most cost reflective charging arrangements are those based around peak usage. However, there would still be a cost reflective message for demand to site in that zone compared with other zones.

A downside of this option is the partial removal of the Triad signals to manage demand on system peaks. It should be noted that this adjusted charging base would only be applicable in negative zones and therefore this effect would be fairly minimal. If more zones become negative then it obviously exacerbates this effect.

Similar to option 1, but to a lesser degree, option 2 also leads to stability issues in the charging and operating arrangements when zones flip to negative demand tariffs.

Given the above concerns this is not National Grid's preferred option, as we believe that overall option 5 (changing the G/D split) is more cost reflective. However, a significant advantage of option 2 is its robustness against all scenarios (i.e. it can deal effectively with any future negative demand tariffs after the change to the G/D split has been implemented). We believe this option represents a reasonable compromise as a secondary mechanism to deal with negative demand tariffs, dealing with the issues of system security with only a marginal loss of cost reflectivity such that other effects can be considered as secondary.

National Grid did propose that this solution be used as an interim solution and be retained in the methodology to provide robustness. However respondents to the consultation did not support this view.

If the criteria for use of option 2 is linked solely to whether a zone has negative demand tariffs then there may be considerable uncertainty regarding whether or not the wider charging base mechanism would be used in any given year e.g. if the test is simply that negative tariffs exist. There is also the possibility that charges could fluctuate from positive to negative over a number of years, with the only notice being with the publication of the final tariffs in January. It may therefore be appropriate to consider criteria that provide greater certainty regarding the use of this option. This could be achieved with the establishment of a range within which the mechanism could be implemented with the appropriate notice period e.g. 12 months. If tariffs moved within the range e.g. £0-0.50/kW then National Grid could give 12 months notice if it was expected that tariffs would move towards negativity, and then the wider charging base would be used for the relevant zones irrespective of whether the tariffs were positive or negative (within the notified range). Such an approach would give users more certainty regarding how they would be charged.

Having considered the views in response to the consultation and noting the detailed implementation issues and the potential costs, National Grid has decided not to recommend this option as an interim solution. In National Grid's original recommendation a significant factor was our understanding of the requirement from condition 1 for a change on 1 April 2006. National Grid have discussed this interpretation with Ofgem, and without commitment, Ofgem indicated that in light of responses National Grid's proposed way forward would not necessarily be unreasonable providing it was justified.

### **Option 3: Negative tariffs, but full commoditisation**

This option adjusts the charging base to full commoditisation in negative demand zones. The arguments for and against are similar to those for option 2, but the effects are all exaggerated. In particular, it moves the charging methodology completely away from a capacity based charge and therefore in National Grid's view would be less cost reflective. It may also have significantly higher implementation and enduring process costs for the industry and National Grid.

Introducing a new charging arrangement exclusively for Half Hourly, HH, demand in negative zones would increase complexity by 50%. This is based on the assumption that the existing arrangements for Non Half Hourly, NHH, demand being charged between 16:00 and 19:00 are retained. As an enduring solution it would be less complex if NHH and HH arrangements were harmonised, however this would be a much more significant change for no appreciable benefit.

Given the move away from the cost reflective principles, the wider impact to charging systems and process and the increased complexity, National Grid does not propose this as a solution to negative demand tariffs.

**Option 4:** Removing negative demand tariffs but squeezing the differentials

This reduces the differentials to avoid the negative demand tariffs. Effectively it reduces the cost reflective signals derived from the model and “squeezes” the tariffs closer together until demand tariff negativity is removed. The overall differential between the north and south and each zone is therefore reduced. Demand in the south and generation in the north would pay less and generation in the south and demand in the north would pay more. Overall, generation and demand at the extremities of the system would see a bigger change than a user closer to the centre of the system. On grounds of cost reflectivity and proportionality National Grid does not support this option.

However, it does retain a differential between each zone, albeit reduced, something that the current methodology with the collar would not do if two zones became negative.

The choice of the squeezing factor is mechanistic, purely chosen to remove the negative demand tariff and therefore could change year on year unless a larger compression factor is selected to ensure greater stability. Adjusting the factor year on year would adversely impact on the overall stability and predictability of the differentials. The variant with a compression factor containing a significant buffer to deliver stability would be more arbitrary and even less cost reflective than calculating the minimum value each year.

In presenting a squeezing option both the generation and demand differentials were squeezed, therefore reducing the cost reflective signal for both. A solution that only squeezed demand differentials may be a more proportionate response. One respondent to the questionnaire mentioned discrimination between embedded and directly connected generators as a reason for squeezing both generation and demand. This view was retained in the consultation response. However, given these parties are exposed to different charges in different ways, which although the differential is similar the residual in the calculation is significantly different, and the obligations and rights are vastly different. If developing a squeezing mechanism careful consideration would need to be given to discrimination between the various Users. One respondent to the consultation who supported the squeezing option indicated it should only be applied to demand.

National Grid does not propose this as solution on the basis that it does not better meet the relevant objectives, particularly cost reflectivity, compared with the alternative options.

**Option 5:** Removing negative demand tariffs by altering the G/D split

This solution retains the full differential as well as addressing the security of supply concerns. Implementation would not require any significant changes to IS systems or processes, although a higher number of generators would be subject to negative generation tariffs and therefore be required to demonstrate their availability over the winter months. In avoiding any new processes it benefits from simplicity and is already understood. The majority of respondents to the consultation supported option 5 (adjusting the G/D split) as the main solution.

A consequence of changing the G/D split is an increase in the overall embedded benefits that a supplier or generator can receive and so actually improves the sharpness of the Triad signal, and hence could have a beneficial effect on security of supply. An additional benefit is that it moves the GB charges towards those of Europe where G/D is more commonly 0/100.

We believe that there is a security of supply risk, even if only one zone is negative, from encouraging demand to increase at peak and generation to turn off. Although the demand in zone 1 is relatively small, so the 'pure' demand effect may be minor, the majority of the problem is likely to be linked to generation reducing export. The zone that this affects at the moment is envisaged to have a significant increase in embedded generation within normal planning timescales. Also, the next zone likely to have negative demand tariffs is zone 2 (South of Scotland) where there is also large activity in terms of embedded generation. As noted earlier, the contractual framework avoids these embedded generators from having a direct relationship with National Grid. Therefore National Grid would not have any readily available mechanism for countering the generation shutting down.

In terms of the changes to the revenue collection split, GB may be encouraged to harmonise with Europe through European legislation at some time in the future, and this is clearly the view of many respondents. As such it would be better in terms of predictability if we publish a clear timetable for this move. Harmonisation would reduce overall market uncertainty and also aid competition and ensure all parties are on a level playing field in terms of average G/D split.

One of the prime arguments against changing the G/D split was that it was a disproportionate and a significant cost for consumers to bear although another was that it hit smaller suppliers. Given the vast majority of power is traded through vertically integrated parties this change should have no effect on the customers of these organisations as the overall net cost does not change. Therefore the actual size of the 'problem' is limited to those independent players. It would be incorrect to imply that of the £285m transferred this was the potential windfall in the absence of competition in the generation sector. As previously noted in this response National Grid believes this figure and the implied windfall is overstated when considered along with the other arguments about vertically integrated parties being able to pass the costs through. In addition smaller independent generators who are seeking to compete with the larger companies should reduce prices. There is no overall increase in transmission costs and therefore with an effective market the lower generation costs and higher supplier costs should be passed through, provided sufficient notice is given to enable the costs to be reflected in the various contracts.

National Grid has considered how best a change to the G/D split could be implemented. Three options have been considered; phasing over a period of time (e.g. 13.5 % change on two successive years); increasing the implementation lead-time (i.e. April 2007 rather than April 2006) or a combination of both of these options. The main advantage of phasing is that it is a gradual move. However we believe to remove uncertainty a phased approach has to be against the background of a defined timetable. It should also be noted that until tariffs are calculated for 2006/7 it cannot be guaranteed that a phased change would remove negative demand tariffs. Phasing also introduces an additional complexity and the associated risk could damage competition. A single change to the G/D split, with an increased lead-time, would be more transparent in providing a clear date when the full change should be reflected in the contractual arrangements.

On balance, National Grid believes it would be simpler and more transparent if there was a single step change, but with a greater lead-time. This would allow users to contract in advance with certainty and with a minimum number of changes to deal with. In light of the responses to the questionnaire and the GB ECM-02 consultation National Grid's preferred implementation approach is to change the G/D split by a single step to 0/100 (100% recovered from demand) in April 2007.

## **5. Changes to the consultation proposals following representations made**

The original consultation proposed that:

- changing the G/D split is the most appropriate response to negative demand tariffs and that on balance it better meets the relevant objectives whilst addressing the concerns expressed about the inappropriate signals.
- to address concerns regarding the effective pass through of the revised generation and demand charges, the change to G/D split should be delayed until April 2007.
- to minimise the number of successive changes and taking account of the lead time, National Grid proposes that the G/D split should be 0/100 from April 2007 with no phasing.

On the issues of how negative demand tariffs should be dealt with in 2006/7, National Grid proposed two alternative options: negative demand tariffs with a charging base the same as NHH demand; or retaining the collar. In the consultation National Grid indicated that allowing negative demand tariffs with a charging base the same as to NHH demand would better meet the relevant objectives.

National Grid also proposed that the option of allowing negative demands with a charging base the same as NHH demand, be included in the methodology as a secondary mechanism to provide future robustness.

Having considered the responses to the consultation, National Grid continue to believe that changing to a G/D split of 0/100 from April 2007 is the option that best meets the relevant objectives. However recognising the cost and possibly complex implementation issues associated with a wider charging base similar to NHH (option 2), National Grid believes that retaining the collar for an extra year (until April 2007) is the most efficient and proportionate response.

In terms of robustness, National Grid still maintains that a wider charging base would best meet the licence objectives as a secondary measure, subject to stability issues being acceptably addressed. However, National Grid does not propose to change the methodology at this time, but consult in more detail with the Industry. This further consultation will seek to establish an efficient manner of introducing the wider charging base and deal with some of the detailed implementation issues such as stability.

Whilst we are not proposing option 2 as part of the methodology at this time, as indicated above, we would welcome the Authority's endorsement in principle of this approach as a basis for a second stage solution. A clear indication of the Authority's

view of option 2 at this time will allow any future consultation to concentrate on the detail of the implementation.

## **6. How The Proposed Modifications Better Meet The Relevant Objectives**

The proposed modification, discussed above and drafted in Appendix 1 to this report, would better meet the Relevant Objectives in Licence Condition C7A 5(a), (b) and (c) of:

- facilitating effective competition in the generation and supply of electricity and (so far as is consistent therewith) in the sale, distribution and purchase of electricity; and
- to result in charges which reflect, as far as reasonably practicable, the costs incurred by National Grid in its Transmission Business; and
- taking account of the developments in National Grid's Transmission Business.

The modification will achieve these objectives in the following manner:

- removing the de-minimus £0/kW collar and facilitating the full differential established in the transport and tariff model would improve the cost reflectivity of the charges;
- delaying the change to the G/D split until April 2007 would ensure the most efficient implementation and facilitate competition by enabling effective pass through of the higher demand charges and lower generation costs by all parties;
- harmonising the average generation and demand charges with external markets would facilitate competition; and
- reducing future uncertainty and improving the stability and predictability of charges would facilitate competition.

National Grid also believes the recommended proposals meet the requirements of Condition 1 placed on National Grid as part of the approval of the GB Use of System Methodology by the Authority in accordance with Standard Licence Condition C4.

## **7. Timetable For Implementation**

The charging methodology is enduring and therefore a change to the methodology can be included which may not necessarily take immediate effect but which would become effective at a point in the future. These proposed changes would alter User's charges from 1 April 2007 however the implementation date for the new methodology would be immediate. It is our intention to reflect the necessary changes to the Statement of the Use of System Methodology as set out in Appendix 1 in November 2005.

**Appendix 1 - Changes to 'The Statement of Use of System Charging Methodology'**

## **Changes to the Use of System Charging Methodology**

*Change marked to Issue 1 revision 1 to become Issue 1 revision 2*

1.5 In April 2004 National Grid introduced a DC Loadflow (DCLF) ICRP based transport model for the England and Wales charging methodology. The DCLF model has been extended to incorporate Scottish network data with existing England and Wales network data to form the GB network in the model. In April 2005, the GB charging methodology implements the following proposals:

- i.) The application of multi-voltage circuit expansion factors with a forward looking Expansion Constant that does not include substation costs in its derivation.
- ii.) The application of locational security costs, by applying a multiplier to the Expansion Constant reflecting the difference in cost incurred on a secure network as opposed to an unsecured network.
- iii.) Up to 31 March 2007 ~~the~~ application of a de-minimus level demand charge of £0/kW for Half Hourly and £0/kWh for Non Half Hourly metered demand to avoid the introduction of negative demand tariffs. The de-minimus level will be removed from the methodology entirely from 1 April 2007 (see 1.6 below).
- iv.) The application of 132kV expansion factor on a Transmission Owner basis reflecting the regional variations in network upgrade plans.
- v.) Up to 31 March 2007 ~~the~~ application of a Transmission Network Use of System Revenue split between generation and demand of 27% and 73% respectively. From 1 April 2007 the Transmission Network Use of System Revenue split between generation and demand will be amended to 0% and 100% respectively (see 1.6 below).
- vi.) The number of generation zones using the criteria outlined in paragraph 2.17 has been determined as 21.
- vii.) The number of demand zones has been determined as 14, corresponding to the 14 GSP groups.

1.6 In approving the original methodology the Authority placed a number of conditions on National Grid to review certain aspect of the methodology. In November 2005 National Grid amended this methodology in response to the charging condition concerned with how the possibility of negative demand tariffs is dealt with in the methodology. The November 2005 amendment involved adjusting the G/D split to 0:100 respectively from 1 April 2007 and removing the de-minimus demand tariff level at the same time.

*Subsequent paragraphs 1.7 through to 1.10 renumbered to 1.8 through to 1.11*

.....

2.37 The next stage is to correct the Initial Transport Revenue Recovery figures above such that the 'correct' split of revenue between generation and demand is obtained. For the initial GB Charging Methodology introduced in April 2005, this has been determined to be 27:73 by the Authority for generation and

demand respectively. This split will be amended to 0:100 from 1 April 2007 (see 1.6). In order to achieve the 'correct' generation/demand revenue split, a single additive constant C is calculated which is then added to all the zonal marginal km, both for generation and demand as below:'

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2.43 Until 1 April 07, if the Final demand TNUoS Tariff results in a negative number then this is collared to £0/kW with the resultant non-recovered revenue smeared over the remaining demand zones:

If  $FT_{Di} < 0$ , then  $i = 1$  to  $z$

Therefore,

$$NRRT_D = \frac{\sum_{i=1}^z (FT_{Di} \times D_{Di})}{\sum_{i=z+1}^{14} D_{Di}}$$

Therefore the revised Final Tariff for the demand zones with positive Final tariffs is given by:

For  $i = 1$  to  $z$ :  $RFT_{Di} = 0$

For  $i = z+1$  to  $14$ :  $RFT_{Di} = FT_{Di} + NRRT_D$

where:

$NRRT_D$  = Non Recovered Revenue Tariff (£/kW)

$RFT_{Di}$  = Revised Final Tariff (£/kW)

.....

4.3 Demand charges are based on a de-minimus £0/kW charge for Half Hourly and £0/kWh for Non Half Hourly metered demand until 31 March 2007 (After this date the de-minimus level is removed for both Half Hourly and Non Half Hourly metered demand).

### Appendix TN-2 and TN-3

*Appendix TN-2 and TN-3 will have the following statement added at the beginning.*

The example below is based on the TNUoS recovered from generation and demand split in the ratio of 27:73 respectively. From April 2007 this split changes to 0:100 respectively. These examples will be updated to reflect that revised arrangement in the annual update to the methodology in 2007.

### Appendix TN-3

(vii) Up to 31 March 2007 the final demand tariff is subject to further adjustment to allow for the minimum £0/kW demand charge. The application of a discount

for small generators pursuant to Licence Condition C13 will also affect the final demand tariff.

*End of changes*

## **Appendix 2 - Consultation GB ECM-02**

## **CONSULTATION DOCUMENT**

**Modification Proposal to the  
Use of System Charging Methodology**

**GB ECM 02**

**Negative Demand Tariffs**

3 August 2005

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## 1. Executive Summary

This paper sets out for consultation National Grid's proposals for modification of the Use of System Charging Methodology to manage negative demand charges that can occur from the DCLF ICRP TNUoS Transport and Tariff model. This paper is published on the National Grid website at the following address:

[www.nationalgrid.com/uk/indinfo/charging/mn\\_modifications.html](http://www.nationalgrid.com/uk/indinfo/charging/mn_modifications.html)

## 2. Introduction

National Grid is obliged under the Transmission Licence:

- (i) to make revisions to the Charging Statements in order that the information set out in the statements shall continue to be accurate in all material respects;
- (ii) to keep the Use of System Charging Methodology at all time under review;
- (iii) to make such modifications of the Use of System Charging Methodology as may be requisite for the purpose of better achieving the relevant objectives, which are:
  - a. to facilitate effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity;
  - b. to result in charges which reflect, as far as reasonably practicable, the costs (excluding any payments between Transmission Licensees which are made in accordance with the STC) incurred by Transmission Licensees in their Transmission Businesses; and
  - c. to take account of the developments in Transmission Licensees' Transmission Businesses.

In addition, National Grid is obliged under Condition C7 of its Transmission Licence to ensure that National Grid shall not make charges which unduly discriminate between classes of customer.

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

This document sets out National Grid's proposals in response to Condition 1<sup>1</sup> of the Authority's approval of National Grid's revised GB Transmission Charging proposals<sup>2</sup>.

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<sup>1</sup> Page 43 'NGC's proposed GB electricity transmission use of system charging methodology - The Authority's decisions' March 2005 80/05 available on Ofgem's website:

<http://www.ofgem.gov.uk/ofgem/index.jsp>

<sup>2</sup> GB Transmission Charging: Use of System Charging Methodology Revised Proposals Conclusion Report to the Authority available on National Grid's industry information website at:

<http://www.nationalgridinfo.co.uk/charging/index.html>

It is proposed that this modification would better meet the Relevant Objectives in Licence Condition C5 5(a), (b) and (c) as listed above and satisfies Condition 1 referred to above.

### **3. Background to the Issue**

As part of the approval<sup>2</sup> of the GB Use of System Methodology, in accordance with Licence Condition C4, the Authority included a number of conditions. Condition 1 was to invite views and to consult on alternative methods of addressing the issue of negative demand charges and to bring forward a proposal to modify the use of system charging methodology in this regard consistent with implementation in April 2006.

At the Transmission Charging Methodology Forum<sup>3</sup>, TCMF, on 12 April 2005, National Grid discussed the process it intended to adopt in carrying out Condition 1. Noting that the issue had been discussed and considered in depth during the process leading up to the approval of the GB charging methodology, National Grid proposed to seek further Industry views through a questionnaire focussing on specific options and issues.

A questionnaire<sup>4</sup> was circulated to the industry in May 2005. 18 responses were received. Further to this National Grid presented a high level summary of the responses at the TCMF in July 2005. In summary, the majority of respondents indicated a preference to avoid negative demand charges by adjusting the proportion of National Grid's revenue recovered between generation and demand. A more detailed explanation of the responses is provided later in this consultation document.

### **4. Explanation of the Issue**

#### **4.1 Negative demand charges**

National Grid believes that negative demand charges, under the current charging regime, would provide inappropriate signals to market participants at times of peak system demand, principally forecast Triad periods. Clearly, security of supply could be affected in operational timescales if actions were taken as a result of these signals.

The current charging regime for Half Hourly metered (HH) demand is based on the average demand taken over the Triad. The Triad represents the three settlement periods of highest transmission system demand within a financial year. These are the half hour settlement period of system peak and the two half hour settlement periods of next highest demand, which are separated by at least 10 clear days, between November and February of the financial year.

For supplier Balancing Mechanism Units (BMUs), and BMUs associated with Exemptable Generation and Derogated Distribution Interconnectors with a Bilateral Embedded Generation Agreement, if the average half hourly metered volume over

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<sup>3</sup> Minutes and presentations of the TCMF are available at [http://www.nationalgridinfo.co.uk/charging/mn\\_presentations\\_120405.html](http://www.nationalgridinfo.co.uk/charging/mn_presentations_120405.html)

<sup>4</sup> Transmission Network Use of System charges questionnaire on negative demand charges, available at <http://www.nationalgridinfo.co.uk/charging/index.html>

the Triad results in an import, the BMU will be charged the relevant kW tariff multiplied by the average import (over the three Triad settlement periods).

If the relevant kW tariff is negative under a Triad charging regime, rather than reducing demand, Users would actually be incentivised to increase demand on forecast Triad periods. Likewise, embedded generation within supplier BM Units would be incentivised to shut down to increase the overall metered demand.

National Grid believes that actions taken by parties in response to these signals to maximise benefits could present a real threat to system security. The overall effect from demand, both from not reducing demand in the traditional manner and further seeking to increase demand, may be comparatively small. However, when combined with the action of embedded generation shutting down the overall effect will have a negative impact on security of supply and therefore needs to be addressed. As well as increasing the demand to be met, embedded generation that shuts down does not have a direct relationship with National Grid and hence is not readily available to National Grid through established arrangements (i.e. through the Balancing Mechanism or other Balancing Services in operational timescales). Indeed, considering the expected growth in embedded generation in northern areas the overall problem is likely to increase significantly in the near future.

In order to avoid these inappropriate signals and resulting behaviours the existing approved methodology includes a 'collar'. This prevents negative demand tariffs by setting a minimum level of £0/kW for the demand tariff in the tariff model. This minimum level also feeds through to the energy consumption tariff (p/kWh) used for non half hourly (NHH) demands. The final tariff is actually positive due to the adjustment for small generators in Scotland being applied at the end of the tariff setting process.

## 4.2 Why negative demand tariffs appear

National Grid's Direct Current Load Flow (DCLF) Investment Cost Related Pricing (ICRP) Transmission Network Use of System (TNUoS) Great Britain Transport and Tariff model<sup>5</sup> will produce negative demand tariffs under certain circumstances. The transport model essentially produces a 'cost' of increasing generation or demand at each node on the system, reflecting the consequential change in power flows on the transmission system. The tariff model calculates nodal costs and then produces an average 'cost' for a number of zones. There are currently 14 demand zones, the boundaries of these represent the historic boundaries between Distribution Network Operators (Grid Supply Point groups). The differences in these average costs feed through to the tariff model and ultimately provide the basis for cost reflective signals.

The tariff model also adjusts these zonal average costs to ensure that the appropriate revenue is recovered. The current model works on the basis of 73% recovered from demand and 27% recovered from generation. Increasing the amount of revenue recovered from demand makes it less likely that negative demand tariffs will occur.

The current Transport and Tariff model, without a collar, would produce a negative demand tariff of approximately £1.58/kW for 2005/6 in Zone 1, the Scottish Hydro Electric Distribution area. The minimum level of revenue recovery from demand that

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<sup>5</sup> See chapter 2 of 'The Statement of Use of System Charging Methodology' for a more detailed explanation of the transport and tariff model, available at [http://www.nationalgridinfo.co.uk/charging/mn\\_charging.html](http://www.nationalgridinfo.co.uk/charging/mn_charging.html)

would be required in order to remove negative demand tariffs in 2005/6, in the absence of a deminimus tariff collar, would be approximately 82%.

#### **4.3 Negative demand charges under the current methodology**

The issue of negative demand charges was discussed and consulted upon in great detail in the process of producing the approved Use of System charging methodology.

National Grid's revised proposals consultation in December 2004<sup>6</sup> recognised that there are a number of ways for dealing both with negative demand charges, and the views expressed by the Authority in its rejection of National Grid's original proposals. In considering these views National Grid developed an alternative solution where the GB charging methodology would incorporate a minimum £0/kW demand tariff principle. This proposed that the lowest a demand tariff could go would be £0/kW (and 0p/kWh for Non Half Hourly metered demand), and the excess revenue would then be divided non-locationally to reduce the tariff in all other demand zones equally and maintaining the overall G/D split.

Following consultation this option was proposed to the Authority in National Grid's revised proposals report<sup>7</sup>. The Authority subsequently approved this approach, subject to Condition 1.

#### **4.4 Condition 1 Review Process**

In April 2005, National Grid presented the TCMF with an indicative work plan to further each of the five conditions that arose from the Authority's approval of the revised Use of System Charging Methodology. In order to address Condition 1, National Grid proposed to issue a questionnaire to gauge industry views on the issue of negative demand charges.

Following consideration of the responses to the questionnaire National Grid would then issue a consultation at the end of July 2005 covering National Grid's firm proposals (this consultation).

Following this consultation National Grid will consider further the views of respondents along with the Transmission Licence requirements on National Grid, to form firm proposals for the way forward. These firm proposals will be presented to the Authority consistent with the timescales required to implement the proposed solution in April 2006.

#### **4.5 Options for dealing with negative demand tariffs**

Following discussion at the TCMF National Grid issued a questionnaire<sup>8</sup> to gauge industry views on various options for negative demand charges.

National Grid was notified of a mistake in the supporting indicative tariff information supplied along with the questionnaire during the response period. National Grid

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<sup>6</sup> 'GB Transmission Charging: Use of System Charging Methodology Revised proposals Consultation', available at [http://www.nationalgridinfo.co.uk/charging/mn\\_charging.html](http://www.nationalgridinfo.co.uk/charging/mn_charging.html)

<sup>7</sup> 'GB Transmission Charging: use of System Charging Methodology Revised Proposals Conclusion Report to the Authority', 28 January 2005, available at [http://www.nationalgridinfo.co.uk/charging/mn\\_charging.html](http://www.nationalgridinfo.co.uk/charging/mn_charging.html)

<sup>8</sup> 'Transmission Network Use of System Charges Questionnaire on Negative Demand Charges', May 2005, available at [http://www.nationalgrid.com/uk/indinfo/charging/mn\\_TNUoS.html](http://www.nationalgrid.com/uk/indinfo/charging/mn_TNUoS.html)

amended the questionnaire and informed all CUSC parties, and the closing date for the questionnaire was extended by one week to take account of these changes.

The questionnaire presented three main options: allowing negative demand charges, squeezing the differential to avoid negative demand charges and altering the G/D split to remove the negative demand charges. The questionnaire also included the option for the respondents to suggest any other alternative method of dealing with negative demand charges.

The option of allowing negative demand charges included three sub options:

- (i) that allowed negative demand charges at the same time as retaining full Triad signals,
- (ii) spreading the charging base for negative zones, and
- (iii) full commoditisation for negative zones (a p/kWh charge as opposed to a capacity £/kW charge).

The two latter options sought, in varying degrees, to remove the negative impact of Triad signals (with negative demand charges) on demand and embedded generation at times of system peak.

To demonstrate the proposal to remove negative demand charges by adjusting the G/D split four tariff scenarios were presented. These were a 18:82 split, a 10:90 split, a 0:100 split and a 0:100 split with other adjustments to indicate how large the margin was before negative demand charges could occur even with a 0:100 G/D split.

The options and scenarios covered were:

Note: HH indicates half hourly metered, generally large industrial customers who can load manage; NHH indicated non-half hourly meters e.g. residential type meters. As a rough indicator, the general split is one third HH and two thirds NHH.

#### Option 1 – Allow negative demand charges with the existing charging base

This represents no change from existing tariffs for generation. HH demand would be metered on 3 peaks separated by 10 days (i.e. the Triad). Embedded generation and demand would be subject to negative demand charges as metered on Triad.

#### Option 2 – Allow negative demand charges with a wider HH charging base

For negative demand zones **only** (currently zone 1), the HH charge would be based on energy usage between 16:00 hrs and 19:00 hrs (i.e. the current NHH charging base). All HH demand in negative zones would be subject to the NHH energy charge (p/kWh).

#### Option 3 – Allow negative demand charges with a fully commoditised charging base

Similar to option 2 above, except the charging base would be spread over the full day. All HH demand would be subject to an energy charge based on the sum of metered demand over 24 hours.

#### Option 4 – Removal of negative demand charges by 'squeezing' tariff differentials

Generation and demand differentials would be reduced by a common factor that removed the negative demand charge i.e. reduced the differentials.

### Option 5 – Removal of negative demand charges by altering the G:D split

Indicative tariffs were calculated using a G:D split of 18:82 which is the minimum adjustment required to give positive demand charges based on 2005/6 tariffs. In addition tariffs were given for:

- Option 5-i) a G/D split of 10:90; and
- Option 5-ii) a G/D split of 0:100; and
- Option 5-iii) a G/D split of 0:100, but with increased scaling of the locational element by approximately 25% (with the total allowed revenue figure remaining unchanged). This illustrates how much the input data (e.g. the expansion constant or security factor) has to change to result in negative demand charges.

## **4.6 Industry response to the questionnaire**

There were 18 responses to the questionnaire, one was marked confidential. The non confidential responses are available on National Grid Industry Information Website (<http://www.nationalgrid.com/uk/indinfo/charging/index.html>).

In summary, the responses to the questionnaire were:

### Option 1 - Allow negative demand charges, but retain the existing charging base

Two respondents indicated option 1 as their most favoured approach. Both majored on the benefits to large industrial consumers from maintaining the Triad as it currently exists. They indicated that they Triad managed, and suggested that any increased revenue recovered from demand would have a negative impact on them. Both indicated that if a system were introduced that reduced the Triad benefits they would not Triad manage.

Respondents also noted the benefits of minimum change to processes and systems with this option.

11 respondents indicated problems with this option. 6 indicated this as the least favoured option. The reasons ranged from it was 'no solution' and 'bizarre' to more general concerns about security of supply. The general view was that this did not address the concern that it encouraged demand to increase on peak and embedded generation to reduce output on peak, which in combination reduced overall security of supply.

One respondent indicated that under option 1 they would actively change processes to increase demand at Triad.

### Options 2 and 3 - Allow negative demand but adjust the demand base.

Only two respondents partially supported these options. One noted that a narrower charging base between options 1 and 2 might be more appropriate. They suggested it could be designed to avoid the incentives for demand increase and remove the benefit for embedded generation to come off at times of peak, but at the same time incentivise demand to reduce at peak. The other respondent thought more work was required on an appropriate charging base that achieved the same.

14 respondents indicated they did not support a change to the charging base. The general reason suggested was that it was inappropriate and disproportionate response to the problem. In addition, most respondents commented on the negative impact of muting or removing the Triad on security of supply and especially customers who actively participate in Triad management.

Several respondents commented that options 2 and 3 would have an impact on processes and systems. As a consequence there would be some IS costs and greater lead-time for development may be required. One party indicated IS costs for itself in the region of £100k.

3 respondents clearly stated they would either increase demand or stop managing demand at Triad, leading to increased demand on peak.

#### Option 4 - Removal of negative demand charges by squeezing the differential

There was no direct support for this option, although one respondent indicated it was better than changing the G/D split. The main comments were that squeezing reduces the differential and distorts signals; the actual process for squeezing reduces cost reflectivity; the squeezing factor would be arbitrary and could vary year on year.

A number of respondents indicated tacit support for some form of squeezing or that a review should be conducted on the parameters in the model as they believed the differentials were overstated in the first place. One supported squeezing that extends to generation on the basis that transmission connected generation should not be discriminated against.

#### Option 5 - Removal of negative demand charges by altering the G/D split

11 respondents indicated this as their preferred option. The main reasons being that it retained the full differential derived from the model; it avoids the negative demand charges and hence the perverse incentive to increase demand and reduce generation in negative zones; it retains the Triad effect so benefits security of supply; it actually increases the embedded benefit so enhances positive signals on both embedded generation and demand.

Many respondents also noted a benefit from moving towards a G/D split of 0:100 as this would be more in line with the arrangements in Europe.

Other comments made in favour were that it benefited smaller generators who can not currently pass through TNUoS costs as effectively as larger integrated generators / suppliers; and it clearly sharpens the incentive on demand who can manage over peaks (i.e. avoids a percentage of the signal being indirectly passed through energy costs).

Several respondents indicated the change should be to 0:100 immediately or in one step, others indicated that a clear timetable for the move to 0:100 was required. The majority appeared to support a phased implementation, indicating that a clear timetable would reduce uncertainty and help to ensure that correct costs could be passed through.

4 respondents indicated that altering the G/D split was their least preferred option. They indicated that it was disproportionate to the perceived problem of negative demand charges and would increase their charges. They indicated they were not

confident that the benefit to generators would be passed through in energy prices and so represented a windfall gain to generators.

#### Option 6 - Other

Excluding the suggestion that lays somewhere between option 1 and 2 (negative charges that give the correct long term signal but do not increase demand growth on the day of peak or embedded generation to shut down on peak), the only other suggestion was that the collar of £0/kW be retained.

3 respondents support the current collar in negative demand zones on the basis that it avoids negative charges, hence avoids security of supply issues of incorrect signals to demand and generation on peak. Also it is simple and results in minimum change.

#### **4.7 National Grid's view**

In addition to better meeting the charging principles in the licence, National Grid believe it is important that:

1. The solution does not encourage embedded generation to shut down at times of peak system demand;
2. The solution does not encourage customers to increase demand at times of peak system demand;
3. The solution protects cost reflectivity, as far as possible;
4. The solution maintains inter-zonal signals i.e. a zone being more or less expensive than the adjacent zones;
5. The solution is proportionate to the issue being addressed;
6. The solution should not be overly complex, and any increase in complexity must show a clear benefit;
7. The cost of implementing new charging arrangements should not outweigh the benefit of an option compared to alternatives; and
8. Where possible the positive signal to Triad manage is retained;

The DCLF ICRP model produces tariff differentials and it is these combined with the 'sharpness' of the Triad mechanism that provides cost reflectivity. For example, reducing the tariff differentials weakens the incentive for demand to site in the north and similarly weakens the disincentive to site in the south. In addition, providing the demand charges are positive, all demand or embedded generation, in the north and south, are incentivised to reduce the demand 'seen' by the transmission system over forecast Triad periods. This will feed through to future transmission investment plans.

National Grid maintains that it is the differential rather than the absolute cost that provides cost reflectivity. The absolute cost will change as a result of 'shifting' the differential up or down in order to ensure the correct amount of revenue is recovered. All generators or suppliers will seek to recover their costs from the end customer. So, in theory, given effective competition and liquidity in the energy market, the non-locational element in the TNUoS charge should be recoverable equally by all parties irrespective of location or whether it is originally levied on generation or demand. For demand that Triad manages this represents an additional benefit in that the market price of energy should not include the residual element of TNUoS applied to generation.

When all demand zones are positive, all embedded generators benefit to a greater or lesser extent depending on their location and contractual relationships. The absolute benefit is in line with the differential, providing a larger benefit in the south. However,

when demand charges become negative (i.e. flip) rather than receiving a benefit to avoid demand take (reduce demand or increase embedded generation), the signal flips to increase demand and reduce embedded generation (maximise metered demand to maximise the benefit). National Grid believes this negative demand charge signal could have a detrimental impact on security of supply - increasing the demand required to meet at peak. Also, the costs of generating in a negative demand zone at suspected Triad peaks would be dominated by the lost benefit of Triad avoidance. Under a tight margin this TNUoS avoidance could have an undue influence on the marginal price in the market. The embedded generation affected would not be Balancing Mechanism plant, nor have any contractual relationship with National Grid, and hence not readily available to National Grid in the short term (i.e. to re-despatch to meet increased demand).

To avoid the negative consequences on security of supply National Grid believes it is essential to remove the inappropriate signal generated by the combination of negative demand charges and the Triad mechanism. However, we also believe it is very important to maintain, to the greatest extent possible, the full differential derived from the transport and tariff model to provide cost reflective charges.

Of the options discussed below National Grid believes that adjusting the proportion of revenue collected between generation and demand (the G/D split), to remove negative charges, but retain the full cost reflective signal, is, on balance, the most appropriate solution. Three other effects of this solution are that it produces more negative generation zones in the south, it increases the small generation discount by approximately 25% and enhances embedded benefits. Increasing the amount paid by demand clearly increases the available Triad benefit. It also increases the absolute differential between the demand and generation tariff as a result of the larger charging base for generation compared with demand (i.e. shifting revenue from G to D has a bigger £/kW effect on demand as the revenue is prorated across less megawatts).

An additional benefit, also noted by many of the respondents to the questionnaire, is that it moves GB charging arrangements towards a G/D split of 0:100 which is more in line with the rest of Europe. Respondents are aware of the position in Europe and this may be causing uncertainty that they need to manage. Moving towards the European norm in a clear and planned manner would reduce uncertainty and seek to ensure that generation in GB is competing with European generation in Europe and GB on a more consistent playing field.

Whilst we believe the change to the G/D split is on balance our preferred solution to negative demand tariffs, there are a number of additional issues to consider including how to deal with any negative tariffs if the effect of the G/D change is exhausted. These are discussed below alongside our views on each of the options considered.

In the Authority's rejection of National Grid's original proposals the issue of proportionality was highlighted as a concern. National Grid understands that all costs are eventually borne by the customer. Providing the market allows the change in revenue streams to pass through there should be no additional impact on customers. National Grid are proposing that the implementation date is chosen to ensure that parties have sufficient time to incorporate changes into contractual arrangements. In addition, moving the G/D split in one step would also serve to reduce the risk of changes to prices not reflecting a change to the G/D split by providing a clear change over time.

**Option 1:** Allow negative demand charges, but retain the existing charging base

Given the inappropriate signals discussed above (to increase demand and reduce generation at peak in negative demand charging zones) National Grid believe the methodology should avoid negative demand charges in conjunction with the existing Triad mechanism. Therefore National Grid does not support this Option 1.

To put the implications in perspective, if the Triad effect was 2% then the demand increase in the north of Scotland is only likely to be 30MW. However, in addition to this the transmission system demand will include embedded generation turning down. The demand effect could be considered small but still appreciable, but with the predicted increase in embedded generation the overall effect could become a significant factor in system security. Also, as the system changes there is the real potential for more zones to become negative, increasing the problem.

This also has an effect on stability of the charges and customer processes. When zones 'flip' to the negative charging arrangements not only do the level and sign of the charges change, but it brings about distinctly different real time practices, confirmed by the respondents to the questionnaire.

**Option 2:** Negative charges, with a wider charging bases (similar basis to NHH)

Option 2 allows negative demand charges, but adjusts the charging base (only in the negative zones) to reduce the effect of inappropriate signals. This is a significant change to the existing methodology and adds another level of complexity on the basis that the revised methodology only applies to negative demand zones and other charging arrangements remain in place.

From National Grid's reading of the responses to the questionnaire it appears that some of the respondents did not fully appreciate that the charge to the charging bases was limited to the negative zone and therefore would not affect them.

It is arguable whether this option completely removes the incentive to increase demand, the effect is obviously much more dependant on the energy price, however, it fails to give the sharpest signal for demand management at peak. Given sufficient liquidity in the energy market the energy price should be sufficient to encourage generation to run or for demand to reduce appropriately i.e. TNUoS charges do not dominate.

This option would have IS implications for National Grid. Considering the synergies, overall costs would be reduced if the same charging base as for NHH demand were used. Through the questionnaire responses Industry participants have indicated they would also have costs.

As the charging base widens the charges move away from a capacity based charge (kW) towards a commodity (kWh) charge. This approach is not entirely consistent with previous analysis that indicated National Grid invests in capacity for peak system demand and so the most cost reflective charging arrangements are those based around peak usage. However, there would still be a cost reflective message for demand to site in that zone compared with other zones.

A downside of this option is the partial removal of the Triad signals to manage demand on system peaks. It should be noted that this adjusted charging base would only be applicable in negative zones and therefore this effect would be fairly minimal. If more zones become negative then it obviously exacerbates this effect.

Similar to option 1, but to a lesser degree, option 2 also leads to stability issues in the charging and operating arrangements when zones flip to negative demand charges.

Given the above concerns this is not National Grid's preferred option, as we believe that overall option 5 (changing the G/D split) is more cost reflective. However, a significant advantage of option 2 is its robustness against all scenarios (i.e. it can deal effectively with any future negative demand charges after the change to the G/D split has been implemented). We believe this option represents a reasonable compromise as a secondary mechanism to deal with negative demand tariffs, dealing with the issues of system security with only a marginal loss of cost reflectivity such that other effects can be considered as secondary.

Therefore, subject to responses including any concerning the practicability of implementing for April 2006 and the overall cost, National Grid proposes that the methodology is amended to incorporate a wider charging base for negative demand zones **only** to be used as a secondary action to deal with negative demand tariffs after the change to the G/D split has been implemented. This option uses the same charging base as used for NHH demand i.e. all year round 1600 to 1900hrs. We believe this is a sensible option as suppliers are used to dealing with this charging base with NHH consumers and it does not create a new unique charging base which we believe would be far more complex for the industry to accommodate. This option would provide robustness in the model for future changes to the system when the G/D split fails to fully remove negative demand charges. If the change to the G/D split cannot be implemented until April 2007 to address implementation, proportionality and cost pass through concerns, this option could also replace the collar as an interim solution in 2006/7.

**National Grid are particularly interested in views on whether the option is a realistic interim solution for 2006/7 or whether alternatives should be considered including the retention of the collar for an additional year.**

If the criteria for use of option 2 is linked solely to whether a zone has negative demand charges then there may be considerable uncertainty regarding whether or not the wider charging base mechanism would be used in any given year e.g. if the test is simply that negative tariffs exist. There is also the possibility that charges could fluctuate from positive to negative over a number of years, with the only notice being with the publication of the final tariffs in January. It may therefore be appropriate to consider criteria that provides greater certainty regarding the use of this option. This could be achieved with the establishment of a range within which the mechanism could be implemented with the appropriate notice period e.g. 12 months. If tariffs moved within the range e.g. £0-0.50/kW then National Grid could give 12 months notice if it was expected that tariffs would move towards negativity, and then the wider charging base would be used for the relevant zones irrespective of whether the tariffs were positive or negative (within the notified range). Such an approach would give users more certainty regarding how they would be charged.

**National Grid would be interested in Industry views as to whether the benefits of the above outweigh the additional complexity in the criteria.**

**Option 3:** Negative charges, but full commoditisation

This option adjusts the charging base to full commoditisation in negative demand zones. The arguments for and against are similar to those for option 2, but the effects are all exaggerated. In particular, it moves the charging methodology completely

away from a capacity based charge and therefore in National Grid's view would be less cost reflective. It may also have significantly higher implementation and enduring process costs for the industry and National Grid.

Introducing a new charging arrangement exclusively for HH demand in negative zones would increase complexity by 50%. This is based on the assumption that the existing arrangements for NHH demand being charged between 16:00 and 19:00 are retained. As an enduring solution it would be less complex if NHH and HH arrangements were harmonised, however this would be a much more significant change for no appreciable benefit.

Given the move away from the cost reflective principles, the wider impact to charging systems and process and the increased complexity, National Grid does not propose this as a solution to negative demand charges.

#### **Option 4:** Removing negative demand charges but squeezing the differentials

This reduces the differentials to avoid the negative demand charges. Effectively it reduces the cost reflective signals derived from the model and “squeezes” the tariffs closer together until demand tariff negativity is removed. The overall differential between the north and south and each zone is therefore reduced. Demand in the south and generation in the north would pay less and generation in the south and demand in the north would pay more. Overall, generation and demand at the extremities of the system would see a bigger change than a user closer to the centre of the system. On grounds of cost reflectivity and proportionality National Grid does not support this option.

However, it does retain a differential between each zone, albeit reduced, something that the current methodology with the collar would not do if two zones became negative.

The choice of the squeezing factor is mechanistic, purely chosen to remove the negative demand tariff and therefore could change year on year. This would impact on the overall stability and predictability of the differentials.

In presenting this option to the industry in the questionnaire both the generation and demand differentials were squeezed, therefore reducing the cost reflective signal for both. A solution that only squeezed demand differentials may be a more proportionate response. One respondent mentioned discrimination between embedded and directly connected generators as a reason for squeezing both generation and demand. However, given these parties are exposed to different charges in different ways, which although the differential is similar the residual in the calculation is significantly different, and the obligations and rights are vastly different. National Grid does not believe it would necessarily be discriminatory to squeeze only demand to remove negative demand charges.

However, National Grid does not propose this as solution on the basis that it does not better meet the relevant objectives, particularly cost reflectivity, compared with the alternative options.

#### **Option 5:** Removing negative demand charges by altering the G/D split

This solution retains the full differential as well as addressing the security of supply concerns. It is not envisaged that implementation would require any significant changes to IS systems or processes, although a higher number of generators would

be subject to negative generation tariffs and therefore be required to demonstrate their availability over the winter months. In avoiding any new processes it benefits from simplicity and is already understood. It was also supported by a large number of the respondents to the questionnaire.

A consequence of changing the G/D split is an increase in the overall embedded benefits that a supplier or generator can receive and so actually improves the sharpness of the Triad signal, and hence could have a beneficial effect on security of supply. An additional benefit is that it moves the GB charges towards those of Europe where G/D is more commonly 0%/100%.

One of the major arguments against this option is that it is disproportionate, moving a significant amount of revenue recovery (£160m for a 10:90 and £285m for a 0:100 G/D split, based on 2005/6 revenues) from generation to demand in response to a perceived security of supply issue and to avoid negative demand charges that pay out in the order of £2.5m (taken from a 2005/6 tariff model).

We believe that there is a security of supply risk, even if only one zone is negative, from encouraging demand to increase at peak and generation to turn off. Although the demand in zone 1 is relatively small, so the 'pure' demand effect may be minor, the majority of the problem is likely to be linked to generation reducing export. The zone that this affects at the moment is envisaged to have a significant increase in embedded generation within normal planning timescales. Also, the next zone likely to have negative demand charges is zone 2 (South of Scotland) where there is also large activity in terms of embedded generation. As noted earlier, the contractual framework avoids these embedded generators from having a direct relationship with the GBSO. Therefore the GBSO would not have any readily available mechanism for countering the generation shutting down.

In terms of the changes to the revenue collection split, GB may be encouraged to harmonise with Europe through European legislation at some time in the future, and this is clearly the view of many respondents to the questionnaire. As such it would be better in terms of predictability if we publish a clear timetable for this move. Harmonisation would reduce overall market uncertainty and also aid competition and ensure all parties are on a level playing field in terms of average G/D split.

In both the Authority's rejection of National Grid's original GB charging methodology and a number of responses to the questionnaire concern was raised as to whether a change in the revenue recovery split between G and D would feed through to a reduction in energy prices in the short term. Clearly with the amounts of money moving from generation to demand this is a major concern. If the reduction in generation costs was not passed through, generators would receive a temporary gain with an increased cost to suppliers and consumers. These views imply a concern that the energy market is either not competitive or lacks sufficient liquidity within year. We do not believe that such a view should necessarily unduly influence the charging methodologies, however an appropriately phased implementation and / or lead time may serve to address these concerns and therefore to facilitate the pass through of the lower generation costs.

National Grid has considered how best a change to the G/D split could be implemented. The questionnaire responses indicated this was an issue, but there was no clear option preferred by all respondents. Three options we have considered are phasing over a period of time (e.g. 13.5 % change on two successive years), increasing the implementation lead-time (i.e. April 2007 rather than April 2006) or a combination of both of these options. The main advantage of phasing is that it is a

gradual move. However we believe to remove uncertainty a phased approach has to be against the background of a defined timetable. It should also be noted that until tariffs are calculated for 2006/7 it cannot be guaranteed that a phased change would remove negative demand tariffs. A single change to the G/D split, with an increased lead-time, would be more transparent in providing a clear date when the full change should be reflected in the contractual arrangements.

On balance, National Grid believes it would be simpler and more transparent if there was a single step change, but with a greater lead-time. This would allow users to contract in advance with certainty and with a minimum number of changes to deal with. Therefore National Grid's preferred implementation approach would be to change the G/D split by a single step to 0:100 (100% recovered from demand) in April 2007.

#### **Option 6: Other**

Given the wording of Condition 1 National Grid does not believe retaining the current collar is a viable enduring solution. However, we believe there is merit in considering retention of the collar as an interim solution to facilitate a longer lead time, given our preference for option 5 with a longer lead time.

On the basis of cost reflectivity alone, option 2 is preferable as an interim measure compared to the collar. However the collar is obviously more preferable in terms of simplicity. In addition, the overall cost and timescales of implementing option 2 against the alternatives needs to be considered. National Grid is interested in the views of the Industry as to the most efficient interim arrangement should increased lead time for implementation of a change to the G/D split change be recommended to the Authority.

### **4.8 Phasing and implementation**

Based on the response to the questionnaire and having also reviewed National Grid's internal system and processes:

- Options 1 and 2 require little or no phasing. In both cases it appears that the majority of respondents to the questionnaire could manage a move to option 1 or 2 within the normal charging calendar process (i.e. 150 days notice of a change in the methodology with final tariffs notified by the end of January for the following April).
- Option 3 requires no phasing, however given it is a more complex change it may not be fully implementable by April 2006.
- Option 4 requires no phasing and can be implemented for April 2006
- Option 5 - in general the industry supported phasing, but also that the number of steps be minimised. As discussed earlier, on balance National Grid believes that an increased lead time with a single step to a G/D split of 0:100 is the most efficient and simple approach.

## **5. Proposed Modification**

### **5.1 Proposal**

National Grid believes that changing the G/D split is the most appropriate response to negative demand charges and that on balance it better meets the relevant objectives whilst addressing the concerns expressed about the inappropriate signals.

Having considered the views expressed by the Authority and the responses to the questionnaire, National Grid proposes that, to ensure the changes to revenue flow are correctly dealt with, the change to G/D split should be delayed until April 2007. However the methodology submitted to the Authority in November 2005 would include this as a change to provide a clear timetable.

To minimise the number of successive changes and taking account of the lead time, National Grid proposes that the G/D split should be 0/100 from April 2007.

To address how negative demand charges should be dealt with in 2006/7, National Grid believes there are two alternative options: negative demand charges with a charging base the same as NHH demand; or retaining the collar. Based on the discussions above, National Grid believes that allowing negative demand charges with a charging base the same as to NHH demand would better meet the relevant objectives. However, National Grid recognises that modifications to parties' systems could be required for a change from April 2006, and that due to their possibly temporary nature, that retention of the collar may be more appropriate as an interim solution. National Grid particularly request further information from Industry participants on the implementation issues for negative demand charges with a charging base the same as to NHH demand to inform our final recommendation to the Authority.

National Grid also proposes that the option of allowing negative demands with a charging bases the same as NHH demand, be included in the methodology as a secondary mechanism to provide future robustness. Responses on this issue would also be used to inform National Grid of the most appropriate interim solution as discussed above.

## **5.2 Justification for proposed modification**

The proposed modification would better meet the Relevant Objectives in Licence Condition C7A 5(a), (b) and (c) of:

- facilitating effective competition in the generation and supply of electricity and (so far as is consistent therewith) in the sale, distribution and purchase of electricity; and
- to result in charges which reflect, as far as reasonably practicable, the costs incurred by National Grid in its Transmission Business; and
- taking account of the developments in National Grid's Transmission Business.

The modification will achieve these objectives in the following manner:

- removing the deminimus £0/kW collar and facilitating the full differential established in the transport and tariff model would improve the cost reflectivity of the charges;
- establishing as a secondary measure the use of the NHH demand charging base to deal with negative demand charges is more cost reflective than the other options considered;

- the use of the existing NHH demand charging base within the secondary action would reduce implementation costs;
- delaying the change to the G/D split until April 2007 would ensure the proportionality of the proposals and facilitate competition by enabling effective pass through of the higher demand charges;
- harmonising the average generation and distribution charges with external markets would facilitate competition;
- reducing future uncertainty and improving the stability and predictability of charges would facilitate competition

National Grid also believes the recommended proposals meet the requirements of Condition 1 placed on National Grid as part of the approval of the GB Use of System Methodology by the Authority in accordance with Standard Licence Condition C4.

### **5.3 Implementation date**

The interim solution for 2006/7 is proposed for implementation from 1 April 2006.

The change to the G/D split, to 0/100, is proposed to be implemented from 1 April 2007. The above changes would be incorporated in a report to the Authority in early October 2005, with the methodology change taking place by the end of October, subject to the Authority's right to veto.

### **5.4 Proposed Changes to the Statement of the Use of System Charging Methodology**

It is proposed that the Statement of the Use of System Charging Methodology be modified in line with the agreed methodology. On the basis of National Grid's preferred solution. The areas of the methodology statement that would change include:

- references to the deminimus demand charge of £0/kW and 0p/kWh would be removed;
- the G/D split from April 2007 would change to 0:100 rather than 27:73 which would apply until then;
- the definition of the secondary mechanism for negative demand tariffs using the NHH demand charging base, including the charging arrangements for demand and embedded generation;
- Suppliers in demand zones with a negative half hourly zonal tariff (£/kW) would all be subject to the charges in line with non-half hourly demand (p/kWh) arrangements for that zone.

The examples in the appendix to the methodology statement would not be revised to reflect the changed G/D split until the methodology was updated for 2007/8.

If the Authority does not veto National Grid's proposals, a revised Statement of the Use of System Charging Methodology will be circulated for comment later this year, prior to formal publication.

## 5.5 Proposed Changes to the Statement of Use of System Charges

Tariffs reflecting the revised methodology would be published in The Statement of Use of System Charges effective from 1 April 2006.

## 5.6 Illustrative Impact on the Use of System Charges

Appendix 1 to this consultation contains illustrative charges for the option discussed in this consultation. This includes National Grid's preferred option:

- Option 5-2 - A G/D split of 0:100, implemented from April 2007, and
- Option 2 - Allowing negative charges but charging all demand in negative demand zones as if it were non half hourly demand (i.e. p/kWh rate 16:00 hrs to 19:00 hrs), from April 2006.

Note: When the G/D split is changed this negates the effect of option 2, even with option 2 remaining in the methodology (i.e. negative demand charges would no longer be expected). Therefore from April 2007 the charges would reflect the changes represented by option 5-2 and not option 2.

Option 5 is displayed with four sub options, as detailed in the questionnaire:

- Option 5 is a G:D split of 18:82, this minimum to remove negative demand charges in 2005/6.
- Option 5-1 is a G:D split of 10:90.
- Option 5-2 represents a G/D split of 0:100.
- Option 5-3 represents a G/D split of 0:100, with a 25% adjustment to the security factor.

All of the illustrative charges are provided to show the relative effect of the proposed changes against the existing methodology. Therefore the existing 2005/6 network model used in setting the 2005/6 charges has been used. To ensure an equitable comparison can be made, the relevant parameters used have not been indexed. Illustrative charges have not explicitly been provided for the retention of the collar, however the 2005/6 charges have been provided for comparison (these include the collar).

## 5.7 Impacts on Other Industry Documents

None are envisaged.

## 6. Responses to this Consultation

Comments and views are invited on all the issues raised in this consultation document. In order that your comments and views are included in National Grid's report to the Authority, responses must be received by **31 August 2005**. If you wish to provide comments on this modification proposal, responses are welcome via email to:

[Patrick.Hynes@ngtuk.com](mailto:Patrick.Hynes@ngtuk.com)

Or alternatively, written comments may be addressed to:

Patrick Hynes  
Commercial Frameworks  
National Grid Transco  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

Please clearly mark any response that should be treated on a confidential basis, the detail of which will not be published within the final report to this consultation paper.

If you have further queries, please do not hesitate to contact Patrick on **01926 656319**.

## Appendix 1: Illustrative Impact on the Transmission Network Use of System Charges

Demand		Half Hour Demand Tariffs								
Zone No.	Zone Name.	Existing 2005/06 HH Zonal Tariff (£/kW)	Option (i) HH Tariff Variance (£/kW)	Option (ii) HH Tariff Variance (£/kW)	Option (iii) HH Tariff Variance (£/kW)	Option (iv) HH Tariff Variance (£/kW)	Option (v) HH Tariff Variance (£/kW)	Option (v)-1 HH Tariff Variance (£/kW)	Option (v)-2 HH Tariff Variance (£/kW)	Option (v)-3 HH Tariff Variance (£/kW)
1	Northern Scotland	0.04	-1.58	-0.04	-0.04	0.07	0.06	1.52	3.34	-0.05
2	Southern Scotland	4.11	0.04	0.04	0.04	1.07	1.69	3.15	4.97	2.88
3	Northern	7.39	0.04	0.04	0.04	0.70	1.69	3.15	4.97	3.62
4	North West	11.14	0.04	0.04	0.04	0.29	1.69	3.15	4.97	4.47
5	Yorkshire	11.18	0.04	0.04	0.04	0.28	1.69	3.15	4.97	4.48
6	N Wales & Mersey	11.21	0.04	0.04	0.04	0.28	1.69	3.15	4.97	4.49
7	East Midlands	13.47	0.04	0.04	0.04	0.03	1.69	3.15	4.97	5.01
8	Midlands	15.03	0.04	0.04	0.04	-0.15	1.69	3.15	4.97	5.36
9	Eastern	14.03	0.04	0.04	0.04	-0.03	1.69	3.15	4.97	5.13
10	South Wales	18.32	0.04	0.04	0.04	-0.51	1.69	3.15	4.97	6.11
11	South East	15.99	0.04	0.04	0.04	-0.25	1.69	3.15	4.97	5.58
12	London	18.52	0.04	0.04	0.04	-0.53	1.69	3.15	4.97	6.16
13	Southern	17.83	0.04	0.04	0.04	-0.46	1.69	3.15	4.97	6.00
14	South Western	20.49	0.04	0.04	0.04	-0.75	1.69	3.15	4.97	6.60

Demand		Non-Half Hour Demand Tariffs								
Zone No.	Zone Name.	Existing 2005/06 NHH Zonal Tariff (p/kWh)	Option (i) NHH Tariff Variance (p/kWh)	Option (ii) NHH Tariff Variance (p/kWh)	Option (iii) NHH Tariff Variance (p/kWh)	Option (iv) NHH Tariff Variance (p/kWh)	Option (v) NHH Tariff Variance (p/kWh)	Option (v)-1 NHH Tariff Variance (p/kWh)	Option (v)-2 NHH Tariff Variance (p/kWh)	Option (v)-3 NHH Tariff Variance (p/kWh)
1	Northern Scotland	0.0056	-0.4481	-0.2079	-0.0323	0.0203	0.0164	0.4294	0.9455	-0.0148
2	Southern Scotland	0.5617	0.0061	0.0060	0.0050	0.1456	0.2303	0.4295	0.6786	0.3925
3	Northern	0.9702	0.0059	0.0058	0.0047	0.0922	0.2213	0.4128	0.6521	0.4752
4	North West	1.4620	0.0059	0.0058	0.0047	0.0376	0.2214	0.4129	0.6524	0.5873
5	Yorkshire	1.4876	0.0059	0.0058	0.0048	0.0375	0.2244	0.4185	0.6612	0.5966
6	N Wales & Mersey	1.5124	0.0060	0.0059	0.0049	0.0376	0.2275	0.4244	0.6706	0.6059
7	East Midlands	1.8050	0.0060	0.0059	0.0049	0.0037	0.2261	0.4217	0.6662	0.6708
8	Midlands	2.0626	0.0061	0.0060	0.0050	-0.0200	0.2315	0.4318	0.6823	0.7358
9	Eastern	1.9099	0.0061	0.0060	0.0050	-0.0047	0.2296	0.4283	0.6767	0.6988
10	South Wales	2.3689	0.0058	0.0057	0.0046	-0.0661	0.2181	0.4069	0.6428	0.7901
11	South East	2.1676	0.0060	0.0060	0.0049	-0.0342	0.2286	0.4265	0.6738	0.7564
12	London	2.4549	0.0059	0.0058	0.0048	-0.0707	0.2236	0.4171	0.6590	0.8160
13	Southern	2.4466	0.0061	0.0060	0.0050	-0.0628	0.2314	0.4316	0.6819	0.8231
14	South Western	2.7284	0.0059	0.0059	0.0048	-0.1002	0.2246	0.4189	0.6619	0.8795

Generation										
Zone No.	Zone Name	Existing 2005/06 Zonal Tariff (£/kW)	Option (i) Tariff Variance (£/kW)	Option (ii) Tariff Variance (£/kW)	Option (iii) Tariff Variance (£/kW)	Option (iv) Tariff Variance (£/kW)	Option (v) Tariff Variance (£/kW)	Option (v)-1 Tariff Variance (£/kW)	Option (v)-2 Tariff Variance (£/kW)	Option (v)-3 Tariff Variance (£/kW)
1	Peterhead	18.16	0.00	0.00	0.00	-1.59	-1.29	-2.44	-3.87	-0.62
2	North Scotland	20.93	0.00	0.00	0.00	-1.90	-1.29	-2.44	-3.87	0.01
3	Skye	23.10	0.00	0.00	0.00	-2.14	-1.29	-2.44	-3.87	0.50
4	Western Highland	18.92	0.00	0.00	0.00	-1.67	-1.29	-2.44	-3.87	-0.45
5	Central Highlands	15.36	0.00	0.00	0.00	-1.28	-1.29	-2.44	-3.87	-1.26
6	Cruachan	15.85	0.00	0.00	0.00	-1.33	-1.29	-2.44	-3.87	-1.15
7	Argyll	13.44	0.00	0.00	0.00	-1.06	-1.29	-2.44	-3.87	-1.69
8	Stirlingshire	12.61	0.00	0.00	0.00	-0.97	-1.29	-2.44	-3.87	-1.88
9	South Scotland	11.82	0.00	0.00	0.00	-0.88	-1.29	-2.44	-3.87	-2.06
10	North East England	8.09	0.00	0.00	0.00	-0.47	-1.29	-2.44	-3.87	-2.91
11	Humber, Lancashire & SW Scotland	4.91	0.00	0.00	0.00	-0.11	-1.29	-2.44	-3.87	-3.64
12	Anglesey	6.12	0.00	0.00	0.00	-0.25	-1.29	-2.44	-3.87	-3.36
13	Dinorwig	8.71	0.00	0.00	0.00	-0.54	-1.29	-2.44	-3.87	-2.77
14	South Yorks & North Wales	3.12	0.00	0.00	0.00	0.08	-1.29	-2.44	-3.87	-4.05
15	Midlands & South East	1.32	0.00	0.00	0.00	0.28	-1.29	-2.44	-3.87	-4.46
16	Central London	-5.71	0.00	0.00	0.00	1.07	-1.29	-2.44	-3.87	-6.06
17	North London	-0.22	0.00	0.00	0.00	0.45	-1.29	-2.44	-3.87	-4.81
18	Oxon & South Coast	-0.70	0.00	0.00	0.00	0.51	-1.29	-2.44	-3.87	-4.92
19	South Wales & Gloucester	-2.55	0.00	0.00	0.00	0.71	-1.29	-2.44	-3.87	-5.34
20	Wessex	-4.95	0.00	0.00	0.00	0.98	-1.29	-2.44	-3.87	-5.88
21	Peninsula	-8.04	0.00	0.00	0.00	1.32	-1.29	-2.44	-3.87	-6.59

## **Appendix 3 - Responses to consultation**

**Immingham CHP LLP**

Portman House  
2 Portman Street  
London W1H 6DU  
Tel: 020 7408 6000  
Fax: 020 7408 6723

Patrick Hynes  
Commercial Frameworks  
National Grid Transco  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

30<sup>th</sup> August 2005

Dear Patrick,

**Modification Proposal to the Use of System Charging Methodology –  
GB ECM 02**

Immingham CHP (IChP) continues to support the need for change to the GB transmission charging methodology. The application of negative demand charges under the current charging regime provides an inappropriate signal at times of peak system demand, a position exaggerated by the triad and one, which undermines security of supply. It also creates distortions to the cost reflectivity of the transport model.

Of the options presented, we continue to strongly support changing the charging split. This proposed approach is the most consistent with the cost reflectivity objective, which we consider to be the primary licence objective in this context. While the net allocation to generators would remain zero, locational differentials would be maintained under National Grid's preferred way forward. Changing the split would also enable earlier alignment with network charging arrangements adopted by GB's neighbours and continental competitors thus promoting common markets, and this change should provide an enduring solution that is straightforward to implement. Importantly the alternative proposals for an enduring solution put forward by National Grid all have, in our view, significant deficiencies both conceptually against the licence objectives and in terms of costs of implementation.

The 100:0 split approach sharpens the incentive on demand participants, who would be better able to manage their load over peaks, albeit in a context where total charges to consumers should not increase. Of the options put forward, option 5-2 would retain the full zonal differentials, and accordingly is the most cost reflective option. Given the imperfect competition in the wholesale market, this rebalancing approach would also reduce the size of a distortion in the generation market as presently only the scale players have certainty that they can pass through TNUoS charges to their customers.

ICHP strongly supports moving the G/D split to 100:0 in one step, but do not understand the rationale behind a one year interim period based on either option 2 or retention of the collar during this transitional phase. The industry has been aware of the current defect and National Grid's intention to fix it for some months, and we see no reason why the defect cannot be corrected for commencement 1 April 2006.

There is never an ideal time to change transmission charging arrangements given the overlapping nature of many energy contracting and transmission timetables, but the vast majority of wholesale contracts for the year 2006/07 have yet to be concluded. It is not obvious what costs would be avoided by adopting an interim year (either retaining the collar or utilising option 2) to compensate for a deferral of the benefits identified by National Grid. Furthermore, as we have highlighted, scale players are presently better able to recover their full costs, and by deferring the normalisation of charges as proposed smaller generators will continue to be placed at a relative disadvantage undermining competition in the market. We support the timetable put forward by National Grid to progress this matter in time for April 2006 commencement (subject to our opposition to the interim year), but believe there is little scope for slippage.

Please let me know if you require anything further or whether I can clarify any aspects of our response.

Yours sincerely,



Rekha Patel  
Power Regulatory Analyst

Inveralmond House  
200 Dunkeld Road  
Perth PH1 3AQ

Patrick Hynes  
National Grid Electricity Transmission Ltd  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

Tel: 01738 456407  
Fax: 01738 456415

30 August 2005

Dear Patrick,

**NGET Consultation on Negative Demand Charges GB ECM 02**

I am writing in response to NGET's consultation on means to address the issue of negative demand charges resulting from the extension of NGET's transmission charging methodology into Scotland as a result of BETTA.

In general we continue believe that the charging methodology has a number of flaws, some of which have been identified in Ofgem's qualified approval of the charging methodology. One particular flaw is that the charges for access to the system are intended to reflect long run incremental costs of providing capacity, whereas in fact they can produce unintended short term effects. In a "deep" charging methodology, when a user connects to the transmission system all the costs of network reinforcement are attributed to that user at the time of connection. Once a decision has been made on the extent of the transmission assets required to cater for a customer's demand, the customer's actions in the short term (in avoiding triad charges for example) has no effect on the physical provision of transmission capacity – the assets are already there.

Whatever the structure of use of system charges, the same amount of physical capacity would still be available since the absolute quantity of capacity is driven by other considerations such as the GB Security and Quality of Supply Standards. However, if demand charges are negative, users would be incentivised to increase demand at system peak. This means that more generation would have to be made available, increasing the plant margin and thereby increasing costs to the generality of customers.

In our view, the fundamental flaw in the connection and use of system charging methodologies is that access charges do not reflect the fact that the long run costs of providing capacity are only dependent on the quantum of capacity requested by the user, not by the subsequent usage of the capacity. This can be corrected in one of two ways:

1. Reverting to a deeper connection charging methodology where assets to provide specified capacity are identified and charged to users, together with a totally commoditised use of system methodology reflecting usage; or
2. Maintaining the very shallow connection methodology and converting use of system into two elements, one related to capacity provision (and invariant of usage) and the second a commodity charge reflecting operation and maintenance costs of the system as a whole.

These more substantive changes to the methodology will need to be the subject of further consideration in the review of charges.

In the short term we are supportive of means to prevent the occurrence of negative demand charges because they give a perverse incentive to increase demand at times when generation capacity is limited.

Also we are supportive of moves to harmonise the overall split of generation and demand charges in GB with those in the majority of mainland Europe, i.e. to move to  $G=0$ .

We also agree that a one-off change signalled sufficiently in advance is the most appropriate means to this end and support the introduction of  $G=0$  from April 2007

As an interim measure for 2006/7 NGET invite views on widening the charging base towards a commodity charge. In our view, any interim arrangements should be a move towards more cost reflective arrangements and not a one-off change that has to be reversed the following year. In general, we support a move towards a commodity based charge since we believe this reflects actual usage rather than capacity provision. However, this should be applied uniformly rather than just in any negative demand zone.

I hope you find these comments useful and if you need any further information, please give me a call.

Yours sincerely,

David Densley  
Regulation Manager

**MODIFICATION PROPOSAL TO USE OF SYSTEM CHARGING  
METHODOLOGY GB ECM 02  
NEGATIVE DEMAND TARIFFS**

**Response by Corus UK Ltd**

**Corus strongly rejects NGC's proposal to remedy the "problem" of negative demand changes on the grounds that it is an entirely disproportionate response. Nothing in the latest consultation document alters our view that the present arrangements for 2005/6 represent an enduring solution. Our response to NGC's questionnaire of May 2005 should be read in conjunction with this response and is repeated below.**

We note that NGC's preference is for its Option (v)-2 which reflects a G/D split of 0/100. This would result in around £5 per kW being added to all demand zones except Northern Scotland. In the Northern zone (of England), for example, the new level would be £12.36 per kW. In 2003/4 the rate for this zone was £0.58 per kW. Is NGC saying that the LRMC of providing incremental capacity has risen over 20-fold in such a short period of time? We doubt it. As Condition 1 of Ofgem's approval of the existing charging methodology – the driver for the present consultation – falls within the relevant objective which requires that charges reflect costs, we believe that NGC's latest proposals clearly fail the test of cost reflectively and should be rejected.

We are surprised that NGC should persist with the aim of a G/D split of 0/100 in view of the rejection by Ofgem of its September proposals. We are also surprised and disturbed by the statement on page 9 of the consultation:- *"National Grid understands that all costs are eventually borne by the customer. Providing the market allows the change in revenue streams to pass through there should be no additional impact on customers."* It seems to us that NGC and the generators who responded to its questionnaire are tacitly admitting, that either there is no competition in generation, or that demand is perfectly inelastic. This is because economic theory suggests that, unless these factors apply, producers would be unable to pass through all the additional cost to customers. Given there is competition, allegedly, in generation and that demand is not perfectly inelastic, certainly for industrial users as a previous NGC document recognises, we consider that generators' arguments for demand to bear a greater portion of transmission charges are merely self-serving.

On page 13 of the consultation, NGC recognises that there is a major concern about whether reductions in generators' costs would be passed through in view of the amounts of money involved. However, it then proceeds to dismiss blithely these concerns by stating they should not necessarily unduly influence the charging methodologies.

It is interesting to note that in its March 2005 decision document Ofgem is less convinced than the generators and NGC about the need for harmonising the G/D split with the rest of Europe, noting that there is currently no requirement

of European law to ensure generators contribute a specified proportion of total revenue.

Finally, we believe that NGC's latest proposals will adversely impact on its obligation to facilitate competition. Giving all generators a windfall of nearly £4 per kW is hardly likely to provoke an outbreak of competition in the generation sector. Supply competition on the other hand will be inhibited because of the uncertainty and additional cost which is levied on suppliers, costs that can only be recovered in line with contractual arrangements with customers. The activity of supply is already relatively risky and is increasingly the domain of large players. Another significant increase in suppliers' costs will hasten exit, especially of small players, and inhibit new entry.

SM 25.08.05

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## **TRANSMISSION NETWORK USE OF SYSTEM CHARGES QUESTIONNAIRE ON NEGATIVE DEMAND CHARGES**

**May 2005**

**Response by Corus UK Limited**

Corus is concerned that new remedies to cure the alleged problem of negative demand charges are likely to be worse than the "disease" itself. It seems to us that the temporary arrangements in place for 2005/6 are worthy of extension to 2006/7 and beyond because they avoid a negative demand charge in N. Scotland and that all the suggested alternatives have downsides for customers.

We find it extraordinary that NGC has not explicitly offered the status quo as one of the options. This smacks of change for the sake of change, creating more uncertainty for end-users who seem to be subjected to significant change in transmission charging almost on an annual basis.

We are also concerned at the suggestion that HH triad charging in £ per kW should be replaced by commoditised charging bases of 1600-1900, or even worse, over 24 hours per day. Although it appears that this is only being proposed here for zones where a negative demand charge would otherwise arise, we believe it would then be used subsequently as a precedent to change the current basis of triad charging in positive demand charge zones in the rest of GB. There have been a number of attempts in recent years to abandon or dilute the present triad charging system which end-users have resisted on the grounds that system security would be adversely affected and the most common and readily understood demand-side response would be lost. For this reason we would oppose options (ii) and (iii).

By far the worst option is (v) and within that (v)-3 is beyond the pale. It is outrageous to penalise customers even more than they already are by moving the G:D split from 27:73 to a more discriminatory level. Rather than consulting on the relatively small issue of negative demand charges (which would only potentially affect some 500MW of HH demand in N. Scotland), NGC should be proposing a move to an equitable G:D split of 50:50. As we said in our response to the BETTA transmission charging consultations, skewing the G:D split even more in the favour of G is a disproportionate response to the perceived problem.

The problem with option (i) is that it leaves a negative demand charge in N. Scotland, which is presumably what NGC is trying to avoid and increases the charges elsewhere by £0.04 per kW. As for Option (iv), all this seems to achieve is to increase the N. Scotland charge by £0.03 per kW whilst exposing other zones to considerable tariff disturbance. There are winners and losers but a major loser would be the Northern zone, which has already seen a huge increase in triad charges over recent years.

Our conclusion is that the present arrangement for 2005/6 is the only sensible option to proceed for future years. Whether this is robust against all possible future changes (Q4) we cannot say. Users cannot predict what transmission charging rabbit NGC might pull out of the hat, so the question is hypothetical. The other advantages of sticking with present arrangements are that it would not require a minimum notice for implementation (Q5), nor phasing (Q6).

SM – 23/06/05

Mr. Patrick Hynes  
Commercial Frameworks  
National Grid  
NG House

24<sup>th</sup> August 2005

Dear Patrick,

**Modification Proposal to the Use of System Charging Methodology  
GB ECM 02 - Consultation on Negative Demand Tariffs**

On behalf of EDF Trading Ltd and EDF (Generation), please find below the comments for your consideration on the above consultation document, issued on 3<sup>rd</sup> August 2005.

Having carefully considered all five options that have been presented in the consultation document to address the negative demand issue, we still believe, as has been communicated to National Grid and Ofgem in previous responses, that a variant of Option 5 represents the best and most appropriate approach.

The G:D split within Great Britain has always been a contentious issue amongst parties and arguably it should always be 100:0 to one side of the market or the other. However and in recognition that it will be passed through to customers in some form eventually, it is not at all unreasonable in our view that this cost should fall directly onto Suppliers from the outset. This would seem to be the most efficient approach, thus leaving the generators to face the locational pricing signal. It also benefits from the advantage that it brings the charging base in closer alignment to that which exists predominantly in the rest of Europe.

Whereas we would support an immediate solution that addresses the problem of negative demand tariffs, we do acknowledge that an immediate move to the 100:0 split might present some difficulties for Suppliers. As such, we would also support a two-step approach such that for 2007/8 the G:D split is either 85:15 or 90:10 and then 100:0 for 2008/9. However, we see no advantage in trying to implement another solution (even as a back-up) such as suggested by Options 2 or 3, especially as it will involve additional IS costs to National Grid and to other CUSC parties. Should a back-up be needed for when the demand charges do go negative and if they are shown to be giving perverse incentives, then the use of the collar should continue to be adopted to keep the charges at no less than zero.

We trust the above is helpful in your further deliberations on this matter.

Yours sincerely

*Steve Drummond*

UK Market Adviser to EDF Trading Ltd.



Lionel Avignon  
UK Power Assets Commercial Manager  
Building B/2<sup>nd</sup> Floor  
Chertsey Road  
Sunbury-on-Thames  
TW16 7BP

31<sup>st</sup> August 05

Patrick Hynes  
National Grid  
Commercial Frameworks  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

**CONSULTATION DOCUMENT - Modification Proposal to the Use of System Charging  
Methodology - GB ECM 02 - Negative Demand Tariffs - 3 August 2005**

Dear Patrick

In response to the publication of the above document, we would like to provide the following comments.

Great Yarmouth Power Limited is strongly in favour of option 2 as this proposed solution would retain the full zonal/regional differential and would address the security of supply concerns as explained in the document.

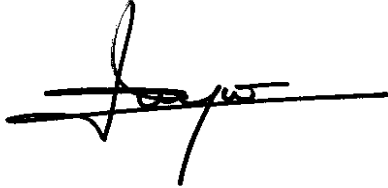
Our support of option 2 is based on the following arguments:

1. It would encourage all generators to be available at times of peak demand given the likelihood of negative generation charges.
2. It would avoid any non-coherent signals to embedded generation at triad periods. The value of Triad for any embedded generation is a major contributor to the overall economics of businesses which generally operate on tight margins. Therefore, operation and maintenance are planned to ensure full availability during triads to access the financial value. We believe that any negative incentives would have a strong and immediate effect on the operation regime. Conversely, increased demand charges would incentivise all embedded generators to focus on their availability and look at ways of increasing capacity marginally, which is the cheapest to increase generation capacity, and therefore favourable to all.
3. TNUoS constitutes a competitive disadvantage to all small generators who do not have a customer portfolio as this cost is fully passed through to customers. This is of particular relevance as the competition in the UK power market is now essentially limited to a few integrated power companies which cover their end customer demand by the equivalent generation capacity.
4. This solution fully retains the differentials reflecting the zonal supply/demand balances and relative incentivisation.

5. A 0:100 split is appropriate. These costs are fully passed through to customers and it will reinforce the geographical incentivisation and strengthen the need for Triad management. "

We trust that the above comments will be of assistance. Please do not hesitate to contact me should you wish to discuss the above further.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Lionel Avignon', written over a horizontal line.

Lionel Avignon



Mr Patrick Hynes  
Commercial Frameworks  
National Grid  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

30 August 2005

## **Re: Consultation Document Modification Proposal to the Use of System Charging Methodology. GB ECM 02**

Dear Patrick,

Thank you for the opportunity to respond on this subject

BizzEnergy Limited is a supplier to the SME sector only. Our customers are principally on 2-3 year fixed price contracts. We have no interest in generation. We are therefore exposed and unable to hedge changes costs. We can invoke clauses in our customer contracts, but these are costly to implement and have undesirable side effects on our reputation and ability to compete in the market as we found following the increase in demand side costs at BETTA.

We are therefore very concerned about any step changes in transmission charges with less than 3 years notice as they will materially impact our cost base, reputation and ability to compete in the market. The following five areas of comment are about alternative approaches that would reduce the impact upon us.

1. Methodology Review
2. Transparency
3. Cost messages
4. Timing of implementation
5. Free Options
6. Cross Subsidy

### **Methodology review**

We are concerned that the issue of negative demand charges and the remedy to fix it is symptomatic of wider issues to do with the appropriateness of the current charging methodologies in a rapidly changing environment. The introduction of significant renewables capacity in the North, with very different cost base and commercial drivers from conventional generation (against which the methodology was built), is an issue. We believe that the cost message to influence renewable generation is very much stronger than that of conventional generation especially given the size of financial support being given to this plant and therefore consideration should be given to its appropriateness of the methodology.

### **Transparency**

We believe in openness and transparency, therefore the additional costs and impact of renewables build on transmission charging should be clearly identified as part of the charging methodology so that the full cost and impact of renewables is visible to market and policy makers.





## **Cost Messages**

The principle behind a cost reflective methodology is to encourage parties to change their behaviour appropriately. There will be a point at which all reasonable actions have been taken and that a further increase in the cost message will have very limited or no effect on behaviour. Cost messages should therefore be set at a level where they can influence behaviour but not in themselves have undesirable side effects. It therefore, may not be appropriate to have a single cost message to all classes of user.

We have now got considerable experience of cost messages in transmission charging. I am unaware of any substantive work that has demonstrated their effectiveness especially on the demand side. Before, embarking on a track of introducing ever more complicated solutions to implement a cost reflective policy it is important to understand the effectiveness of such price signals. A significant piece of research is therefore required to support this policy on cost reflectivity within the demand side of transmission charging.

We believe that the effectiveness of a cost signal on demand and generation are different. Demand being relatively less elastic than generation. We therefore believe that having different locational messages in demand and generation may be appropriate and that this can be used to improve the quality of the message. In doing so we believe that as the cost message has a lower impact on the demand side that a lower slope may be appropriate and therefore remove the need for negative demand charges.

## **Timing of change**

This is the most important aspect to Bizz in terms of when and how changes are implemented.

Changes that are implemented with three years notice can be managed by inclusion of the price effects into customers offers. This will avoid the costs and risks associated with invoking pass through clauses in fixed price contracts, which adversely and differentially impact standalone suppliers in the SME sector. This is because we have no offsetting features of generation nor do pass through contracts generally operate in this sector of the market. The changes that resulted from BETTA did discriminate against players like ourselves and do present a real barrier to effective competition in the SME sector.

A second but less favoured approach would be to phase a change in over time, limiting its impact to say 5% change per annum.

A final solution would be to link the change with the price control so that some of its effects could be mitigated by a Po reduction (assuming there is one).

## **Free Options**

Users who TRIAD manage avoid paying for the transmission system. It is at their choice that they do so, they do not disconnect from the system nor give any firm commitment not to consume at time of TRIAD. There is a probability that they will actually use the system at time of TRIAD. In effect they are getting a free option to use the system against which some contingency or system support is required. It is therefore appropriate and consistent with a cost reflective methodology that users should pay an option fee or system service fee to reflect the value of their free option to consume and the necessary security that has been built into the system to deliver this. If all users paid a system service charge (option fee) albeit at a modest level this would negate the need for negative demand charges.

## **Cross Subsidy**

Changes to the G/D split distort competition as they favour the vertically integrated players. This has been clearly evident from the behaviour of market participants following the increase in demand charges at the introduction of



BETTA. We believe changing the G/D split if carried out with less than three years notice will unfairly discriminate against standalone suppliers in the SME sector and give rise to concerns on Competition grounds.

In effect the vertically integrated players are cross subsidising between their generation and supply businesses. This should be prevented and all participants placed on a level playing field. We therefore believe that in order to avoid this that Generation and Supply Accounts should be separated. That the transfer price should be the day-ahead exchange price and that all costs of transmission should be properly accounted for within the businesses.

Regards

Keith Munday  
**Commercial Director**

Patrick Hynes  
Commercial Frameworks  
National Grid  
Warwick Technology Park  
Gallows Hill  
Warwick CV34 6DA

Your ref  
Our ref  
Name Shona Watt  
Phone 07748112538  
Fax  
E-Mail shona.watt@npower.com

27<sup>th</sup> August 2005

**Modification Proposal to the Use of System Charging Methodology GB ECM 02:  
Negative Demand Tariffs**

Dear Patrick

Thank you for the opportunity to respond to the above consultation.

National Grid has identified a change to the G/D split as the most appropriate enduring approach to the removal negative demand tariffs. This has the additional advantage of moving towards harmonisation with other European markets. The single step approach to a G/D split of 0:100 with a notice period of greater than a year would minimise disruption whilst providing sufficient time for the change in revenue streams to be incorporated into contractual arrangements.

The Authority may consider that, despite the greater notice period, a change in the G/D split is not an appropriate approach to the removal of negative demand tariffs. In this case, the option 2 described in the consultation paper represents the best alternative since it maintains the cost-reflectivity of the tariffs with minimum disruption to the charging base.

The benefits of implementing a new solution such as option 2 for a single charging year 2006/07 are likely to be outweighed by the associated costs. A more pragmatic approach would be to retain the existing demand tariff collar for another year with full implementation of the enduring solution for charging year 2007/08.

If you wish to discuss any aspect of our response please do not hesitate to contact me.

Yours Sincerely

Shona Watt  
Transmission Charging Manager  
npower

[RWE npower](#)

Trigonos  
Windmill Hill Business Park  
Whitehill Way  
Swindon  
Wiltshire SN5 6PB

T +44(0)1793/87 77 77  
F +44(0)1793/89 25 25  
I [www.rwenpower.com](http://www.rwenpower.com)

Registered office:  
RWE Npower plc  
Windmill Hill Business Park  
Whitehill Way  
Swindon  
Wiltshire SN5 6PB

Registered in England  
and Wales no. 3892782

Patrick Hynes  
Commercial Frameworks  
National Grid Transco  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

Renewable Energy House  
1 Aztec Row, Berners Road  
London, N1 0PW, UK

T 020 7689 1960  
F 020 7689 1969

Wednesday 31st August 2005

Dear Patrick,

### **BWEA Response: Negative demand tariffs**

BWEA welcomes the opportunity to comment on the proposals relating to negative demand tariffs.

This response has been prepared on behalf of the wind industry and BWEA members although individual member companies with wider interests may hold a different position on some issues.

BWEA was established in 1978 and is the representative body for companies active in the UK wind energy market. Its membership has grown rapidly in recent years and now consists of over 320 companies including all grid-connected wind energy and every company with a lease to develop offshore.

### **Negative demand tariffs**

BWEA notes, and agrees with, the arguments for avoiding negative demand charges. Therefore BWEA supports the implementation of changes to the charging methodology to avoid negative demand charging.

### **Amending the G/D split**

BWEA has consistently proposed that the G/D split be amended to 0/100 in line with emerging European practice and therefore we support the proposal to so amend the charging split.



## **Secondary measures**

BWEA notes the concern that even with the amended G/D split, negative demand charges may still arise in the future. However, BWEA believes that a more appropriate secondary measure would be to reduce the tariff differentials of *both* generation and demand charges. This is in line with BWEA's long standing belief that the locational signals applied in the final charges continue to be overstated and are greater than can be justified by the application of a cost-reflective principle.

## **Timing**

BWEA notes the proposal to introduce the amended charges from 1 April 2007. However the changes are intended as an improvement on the present charging arrangements. BWEA believes that there is no need for network users to be unduly denied the benefit of these improvements. BWEA therefore suggests that the changes are implemented from 1 April 2006.

If you have any questions please feel free to contact me at any time.

Yours sincerely,

**Richard**

Richard Ford  
Head of Grid and Technical Affairs  
British Wind Energy Association



Patrick Hynes  
Commercial Frameworks  
National Grid Transco  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

Uskmouth Power Company Ltd  
West Nash Road, Newport,  
Gwent, NP18 2BZ  
Tel: +44 (0)1633 292700  
Fax: +44 (0)1633 292701  
info@uskmouthpower.com

August 2005-08-15

Dear Mr Hynes

### **Modification Proposal to the Use of System Charging Methodology**

Uskmouth Power Limited agrees with National Grid that the incentives associated with negative demand changes should be removed by altering the charging regime. We supported the current collar on payments as we agree that the incentives have a potentially detrimental impact on system security. While we agree that a move in the G/D split would resolve the issue, we believe there are merits in moving to a 10:90 split in April 2006 then to 0:100 in April 2007. We also feel NGC must continue to send locational signals to generators.

Uskmouth believes that it is vital to maintain the incentives on future generation to locate to points on the system where the supply shortfall is greatest. Not only will such investments help improve the security of supply the southern part of the UK, but new build in these areas should also lower the prices to customers and improve the over all efficiency of the network. Reducing the quantity of losses is of benefit to customers and the environment and locational signals therefore remain vital to the longer term development of the market. Generators must therefore continue to get pricing signals from NGC.

Uskmouth supports National Grid's proposal to adjust the G/D split to 0:100 so more revenue is collected from demand. In order to effect the change in a timely manner, we are disappointed that National Grid is waiting until April 07



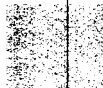
to alter the charges. Uskmouth can see no reason that this could not be achieved sooner and will be surprised if system changes are such as to delay this. In order to facilitate a smooth transition NGC should consider a move to 10:90 in April 2006 with a further adjustment to 0:100 in April 2007.

While Uskmouth supports option 5-ii, we believe that NGC should maintain the collar to ensure that negative demand charges do not become an issue at a later date. We note that changes to the security factor could lead to negative demand charges reappearing in the future.

If you wish to discuss this response in more detail please do not hesitate to contact me.

Yours sincerely

**Sam Murray**  
Head of Trading



Patrick Hynes  
Commercial Frameworks  
National Grid Electricity Transmission plc  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

31 August 2005

0141 568 4469

Dear Patrick

**Modification Proposal GB ECM 02, Negative Demand Tariffs**

Thank you for the opportunity to comment on Modification Proposal GB ECM 02 regarding negative demand charges. This response is submitted on behalf of ScottishPower UK Division which comprises the UK energy businesses of ScottishPower including ScottishPower Generation Ltd, ScottishPower Energy Management Ltd and ScottishPower Energy Retail Ltd.

ScottishPower UK Division supports National Grid's proposal to change the G:D split to 0:100. Whilst we have previously suggested that such a change should be phased in over 5 years we understand NGC's argument that a single step change can be accommodated by the industry if sufficient notice is given. Implementation of the change in 2007 should allow contracting parties to take account of the forthcoming change.

We are disappointed however that National Grid has not accepted our proposal that the secondary mechanism to avoid negative demand charges occurring in the future should be a squeezing of the locational differentials. We continue to believe that the underlying cause of negative demand charges is the excessive locational differentials produced by the transport and tariff model and that these should be curtailed.

We do not support the proposed secondary mechanism, and certainly do not believe that it should be developed now for use as an interim measure in 2006/7. We do not believe that to develop a commodity charging regime for a subset of charging zones would be an efficient response to any reappearance of negative demand charges when other solutions such as squeezing of differentials or collaring of charges are available which would not require changes to industry processes and systems. We believe that the response to a reappearance of negative demand charges should be considered at the time. It would certainly not be efficient for the industry to make changes to their processes and systems now to accommodate this new methodology for one year when, should the enduring arrangements ever be implemented in the future, other changes may have taken place which would render this first implementation unsuitable for the circumstances of the time. We believe that the most efficient solution for 2006/7 is to roll forward the current methodology under which the demand charges are collared at £0/kW.

Yours sincerely

**Mike Harrison**  
ScottishPower Energy Management Limited



# FIRST HYDRO

A COMPANY OWNED BY INTERNATIONAL POWER PLC AND MITSUI & CO.,LTD

**First Hydro Company**  
Bala House  
Lakeside Business Village  
St David's Park  
Deeside  
Flintshire CH5 3XJ  
Tel: +44 (0) 870 238 5501  
Fax: +44 (0) 870 238 5581

Patrick Hynes  
Commercial  
National Grid Company plc  
NGT House (Floor C3)  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

31<sup>st</sup> August 2005

Dear Patrick

## **Modification Proposal GB ECM 02**

Thank you for the opportunity to comment on this proposed modification. We have participated actively in the debate that has taken place looking at how to cure negative demand charges. The debate has also covered the issues of European harmonisation of G/D tariffs. After some two years of consultations on the issue we are pleased that a stable enduring solution is being proposed by NGC that will at give some certainty to UoS tariffs over the medium term.

We support NGC's proposal that as the G/D split should be modified from 1<sup>st</sup> April 2007 to 0/100 as this will give an enduring solution that will solve the Negative Demand issue. The timing for implementation of April 2007 will give sufficient time for markets to factor this change into pricing of products and should have no effect on customers.

The solution of changing the G/D split is better than the various alternatives suggested in NGC's recent Industry Questionnaire. We are pleased that the proposal does not dampen the incentive for embedded generation to run at peak and also moves closer to a G/D split that is the European norm.

Whilst we believe that the enduring solution will solve the Negative Demand problem from 2007/8, the issue of negative demand charges for 2006/7 will still need to be addressed we would favour retention of the collar mechanism that currently applies for a further year.

Should you wish to discuss any issues further please do not hesitate to contact me.

Yours sincerely

Simon Lord  
Transmission Services Manager  
First Hydro Company

By-e-mail [Patrick.hynes@ngtuk.com](mailto:Patrick.hynes@ngtuk.com)



First Hydro Company Registered Office:  
Senator House, 85 Queen Victoria Street, London, EC4V 4DP  
Registered in England and Wales No. 2444277 VAT Registration No. 656 2000 65



INVESTOR IN PEOPLE

31 August, 2005

Patrick Hynes

Commercial Frameworks  
National Grid Transco  
NGT House  
Warwick Technology Park  
Gallows Hill  
WARWICK

CV34 6DA

Dear Patrick,

**Negative Demand Tariffs**

Thank you for the opportunity to comment on the above consultation.

British Energy agrees that negative demand charges encourage inefficiency and we do not support negative charges.

We fully support the move to lower G charges, which is in accord with the way transmission charges are levied in many EU member states and is more economically efficient.

We believe that the collar on negative demand charges ought to remain for 2006/07 until the transition to  $G = 0$  on average in 2007.

If you have any questions regarding this response please do not hesitate to contact me.

Yours sincerely,



**Gayle Cairns**

**Trading Consultant  
British Energy Power and Energy Trading**

☎ 01452 653860

☎ 07709 458951

✉ [gayle.cairns@british-energy.com](mailto:gayle.cairns@british-energy.com)



Patrick Hynes  
National Grid  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

**E.ON UK plc**  
Westwood Way  
Westwood Business Park  
Coventry  
CV4 8LG  
eon-uk.com

Paul Jones  
024 7642 4829

paul.jones@eon-uk.com

30 August, 2005

Dear Patrick,

### **GB ECM 02 - Negative Demand Tariffs**

I am responding to the above consultation on behalf of E.ON UK. We support National Grid's proposals for a long term solution to this issue. However, we do not believe that the interim solution which has been proposed is appropriate and would suggest that the existing arrangements are rolled over for another year.

Of the options contained in the consultation paper we believe that only the proposed long term solution and the present arrangements represent workable and acceptable responses to the issue of negative demand charges. Our comments on the individual proposals are as follows:

#### **Option 1 - Allow negative demand charges, but retain the existing charging base**

This is of course no solution at all. We believe that negative demand charges should be avoided in relation to a triad charging system. We agree that to not do so risks providing an incentive for artificial levels of demand at peak times. This may be an appropriate thing to do in the context of transmission infrastructure reduction. However, it is arguable that it is not correct from the perspective of wider energy efficiency.

E.ON UK plc  
Registered in  
England and Wales  
No 2366970  
Registered Office:  
Westwood Way  
Westwood Business Park  
Coventry CV4 8LG

## **Options 2 and 3 - Allow negative demand but adjust the demand base**

The main problem with this solution is that it would require a change to suppliers' contracts, processes and systems in order to deal with the specific zone or zones in question. This is compounded by the fact that the zones to be treated differently could change year on year. Our supply business considers that the effect of these options would be significant.

## **Option 4 – Removal of negative demand charges by 'squeezing' tariff differentials**

The criticism of the present solution, which led to Ofgem's imposition of condition 1, was that it reduces the cost reflectivity of the charging methodology by diluting the zonal differentials for negative zones. On this basis, it does not seem appropriate to suggest a solution which reduces the zonal differentials for all zones across the whole of GB. This would appear to be a further retrograde step rather than an improvement.

## **Option 5 – Removal of negative demand charges by altering the G:D split**

This is our preferred option. It maintains the level of zonal differential calculated by the locational tariff, whilst maintaining the triad charging basis for HH demand. It avoids process and system changes for suppliers and presumably minimises the changes needed to National Grid's systems and processes also.

We agree that sufficient notice should be given to allow the market to react appropriately and believe that an implementation date of April 2007 would be appropriate given a suitable amount of notice. Therefore, we would welcome a prompt decision.

## **The proposed interim solution**

Given our reservations about options 2 and 3 we were concerned to see that National Grid was suggesting that option 2 would be a possible suitable basis for an interim solution. However, we note that National Grid recognises that this would have systems implications for suppliers. Our concerns about option 2 are increased if it were to be made for one year only. It would appear to be particularly inappropriate to incur such transactional costs for a temporary solution.

We would therefore suggest that the existing arrangements are maintained until the long term solution is implemented in April 2007.

Yours sincerely

Paul Jones  
Trading Arrangements



taking care of the essentials

Patrick Hynes  
Commercial Frameworks  
National Grid  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

**Centrica Energy**

Centrica plc  
2nd Floor Millstream East  
Maidenhead road  
Windsor  
Berkshire SL4 5GD  
Tel. (01753) 431052  
Fax (01753) 431150  
[www.centrica.com](http://www.centrica.com)

Our Ref.  
Your Ref.  
31st August 2005

Dear Patrick,

**Modification Proposal to the Use of System Charging Methodology GB ECM 02 -  
Negative Demand Tariffs**

Centrica welcomes the opportunity to provide comments to National Grid's consultation on the proposal raised to eliminate negative demand charges from the Use of System charging methodology.

We strongly oppose the proposal to alter the generation/demand split from the current 27/73 to 0/100. We believe this will result in an increase to the overall costs of supplying electricity to consumers, as we do not foresee an associated decrease in the market cost of electricity. This has been previously illustrated: when National Grid changed the methodology to the "plugs" model incorporating a super shallow connection policy and moving £2.5 billion of assets from connection to infrastructure, directly connected generators experienced an overall reduction in their charges. This was not reflected, in any discernible way, in a reduction in the cost of energy.

We also note that in their decision document (dated 10th Dec 2004), Ofgem concluded that changing the generation/demand split to the proposed (at that time) 10/90 "was a disproportionate measure relative to the 'problem' it was seeking to address, i.e. negative demand charges in the north of Scotland".

As previously stated in our charging methodology consultation responses, we believe that this proposal may raise an issue with competition between suppliers. Due to the lack of a discernible decrease in the cost of electricity, smaller suppliers are likely to find it increasingly difficult to compete with larger more vertically integrated suppliers, if this proposal is implemented and no reduction in costs is passed through to suppliers.

We suggest a more equitable solution would be to alter the differentials within the demand tariffs. As this is purely a demand issue (negative generation tariffs are allowed within the current methodology) we believe the solution should seek to alter only the demand tariffs

A **centrica** business

Centrica plc - The group includes British Gas Trading, British Gas Services and Accord Energy  
Registered in England No.3033654. Registered Office: Millstream, Maidenhead Road, Windsor, Berkshire SL4 5GD

and not confuse issues by reducing the overall revenue collected by generators to zero. In addition, we believe that the current demand differentials are currently too wide and could be significantly reduced to ensure negative demand charges would not result. We do not believe this would have any significant effect on the cost reflectivity of the model.

This solution would not have an adverse impact on consumers, as overall costs would not rise, neither would smaller suppliers be more adversely affected than larger vertically integrated ones if this suggestion is adopted.

Notwithstanding the above comments, we do not support the premise that negative demand charges are likely to have a significant influence over usage in times of high system peak. Large half-hourly (HH) metered customers would take a significant risk in terms of on-going energy costs in order to ensure they covered all possible Traid periods. We do not believe there is sufficient return on this risk to warrant increasing usage to such an extent that it would present a real risk to system security. If National Grid consider this is an issue, then changing the basis of charging for HH consumers rather than altering the methodology to eliminate negative demand charges would seem the more appropriate action.

Please contact me if you have any queries regarding these comments.

Yours sincerely,

Sarah Owen  
Commercial Manager  
Centrica Energy

**A *centrica* business**

Centrica plc - The group includes British Gas Trading, British Gas Services and Accord Energy  
Registered in England No.3033654. Registered Office: Millstream, Maidenhead Road, Windsor, Berkshire SL4 5GD

Our Ref  
Your Ref GB ECM 02

Patrick Hynes  
Commercial Frameworks  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA



Date 25 August 2005

Dear Patrick,

**Modification Proposal to the Use of System Charging Methodology: Negative Demand Charges.**

EDF Energy are pleased to have the opportunity to respond to this proposal to modify the Use of System Charging Methodology. We note, and agree with, the views of the Authority that negative demand charges are not desirable and carry potential risks to the efficient operation of the GB Transmission system.

We also believe that changing the G:D split is an efficient way of resolving the problem of negative demand charges without unnecessarily major or arbitrary changes to the charging methodology; in addition it would make GB generation charges more consistent with generation charging in other parts of the EU thus facilitating the development of a competitive European market in electricity..

We are, however, disappointed that NGET have proposed a single change to the G:D split from 2007-08 rather than a phased implementation. Although the intent of the proposed change is that end customers should not see any increase in the total cost of transmission, there is a risk that such a steep drop in generation TNUoS – of around £4/kW<sup>1</sup> – may not immediately be reflected in the wholesale market price for electricity. This means that suppliers and consumers may effectively be paying twice for a proportion of TNUoS charges. The Authority has previously commented that large changes to the TNUoS charging base can “*have an adverse impact on consumers in the short term*”<sup>2</sup> although the change will filter through into wholesale prices over a longer period.

EDF Energy has concerns that a single step change to the G:D split, even with notice of more than a year, could result in temporarily higher TNUoS costs for consumers and

<sup>1</sup> Based on 2005-06 charges increased for inflation and no other changes.

<sup>2</sup> Ofgem Decision 275/04, December 04 on GB Transmission Charging p4 and 53.

a windfall gain for some generators before the wholesale market price is able to adjust. For this reason we believe that this change should be phased in over two or three years.

For the interim solution until the G:D split is fully changed, we feel that the better option is for NGET to retain the collar for an additional year. The level of negative charges in the north of Scotland, prior to the application of the collar, is relatively low and will not increase significantly for 2006-07 meaning that the distortion to the charging methodology is small. The alternative option of changing the charging base where demand charges become negative risks greater instability as the methodology could change from year to year. In addition, using a different methodology in certain GSP groups could be considered a discriminatory and disproportionate response to a limited problem.

If NGET does believe that this alternative methodology offers a better charging solution for demand users than the existing TRIAD methodology then it should be consulted upon separately on its own merits rather than as part of a change to the G:D split.

We hope that you have found these comments useful, if you have any queries, please do not hesitate to contact me on 020 7752 2524 or Jim Beynon on 020 7752 2523.

Yours sincerely



Stephen Moore  
Energy Market Strategy  
EDF Energy

Patrick Hynes  
Commercial Frameworks  
National Grid Transco  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

5<sup>th</sup> August 2005

**MODIFICATION PROPOSAL TO THE USE OF SYSTEM CHARGING  
METHODOLOGY (GB ECM 02) – NEGATIVE DEMAND TARIFFS**

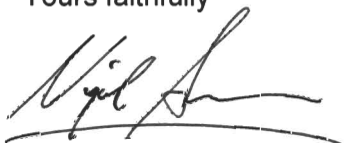
I refer to the consultation document published by NGC concerning the above modification proposal. Please find below the response from Magnox Electric.

Magnox Electric supports the proposals from NGC to amend the charging methodologies to provide a more satisfactory basis for removing **negative demand charges**. We agree with NGC that **negative demand charges are potentially detrimental** to security of supply and should be avoided in the charging methodologies.

Of the options presented, we believe that NGC has chosen the most appropriate. We agree with NGC that amending the G/D split has significant merits, including the maintenance of **cost reflective locational signals**, **greater harmonisation with European tariffs**, and enhancement of **embedded benefits**. Equally, we do not believe, along with NGC, that **changes in the allocation of charges between generators and suppliers** should **necessarily disadvantage consumers** and by improving the charging methodologies will on the contrary be of benefit to consumers.

With regard to implementation, we note that **phasing or delayed implementation** has not generally been adopted in respect of **other charging modifications**, for example the significant changes that arose as a consequence of BETTA. We would therefore support the implementation of **NGCs preferred long term solution at the earliest opportunity**. We can accept that implementation in **April 2006** may be difficult for some suppliers, but it should certainly not be later than **April 2007**. The relative merits of stability in charging versus evolution of the charging methodologies in a manner that **better meets the applicable objectives** have been well rehearsed. We do not believe there are any unique arguments that apply in the case of this modification that should **unduly delay implementation**.

Yours faithfully



**Nigel Burrows**  
Regulation Manager  
Magnox Electric



**CHEMICAL INDUSTRIES**  
ASSOCIATION

31 August 2005  
Patrick Haynes

Commercial Frameworks  
National Grid Transco  
NGT House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

Kings Buildings  
Smith Square  
London SW1P 3JJ

Telephone: 020 7834 3399  
Fax: 020 7834 4469

Direct phone: 020 7963 6736

Direct fax: 020 7834 8587

e-mail: [LeedhamS@cia.org.uk](mailto:LeedhamS@cia.org.uk)

[www.cia.org.uk](http://www.cia.org.uk)

**NEGATIVE DEMAND TARIFFS CONSULTATION**

Dear Patrick

The CIA welcomes the opportunity to comment on National Grid's consultation on its proposals for modification of the Use of System Charging Methodology to manage the negative demand charges that can occur from the current model. However the CIA is unable to support National Grid's preferred solution of moving to 100% transmission revenue recovery from demand, and we are concerned with the process that resulted in this consultation. We believe that the current status quo should be maintained, and that the security of supply issues associated with negative demand charges can be overcome by collaring the demand tariff to zero. In particular we consider that:

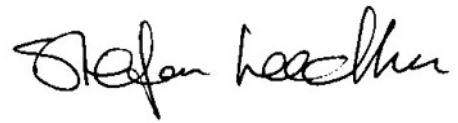
- National Grid's proposed solution of shifting £285m of revenue recovery from generation to demand represents a disproportionate solution to avoiding £2.5m of negative demand charges.
- It is not guaranteed that the reduction in costs will be passed through by generators, resulting in increased costs to suppliers and consumers.
- Any solution to the problem of negative demand charges should be robust against all future pricing changes, and that National Grid's preferred solution does not provide this. We are concerned to see that National Grid has forwarded a second solution to this issue, as it cannot guarantee that their preferred solution will answer the problem of negative demand charges indefinitely.
- The current solution to negative demand charges is more than acceptable as it incentivises consumers to reduce demand during the Triad period, encourages embedded generators with supplier BM Units to increase supply, whilst ensuring there are no perverse signals in negative demand zones by "collaring" charges to £0/MW.
- National Grid has arrived at this consultation and preferred solutions from the responses to the questionnaire that was issued on 27 May 2005. National Grid has recognised from the responses to this questionnaire that not all industry participants fully understood what was being proposed. We therefore believe that National Grid should have returned to the questionnaire stage before embarking on a formal consultation to ensure the views of the industry were adequately informed and represented.
- National Grid should have explicitly included the current solution to the issue of negative demand charges as an option in both the questionnaire and consultation.



CIA members are committed to Responsible Care

If you have any queries regarding any of the points raised in this letter please contact me.

Regards

A handwritten signature in black ink that reads "Stefan Leedham". The signature is written in a cursive, flowing style.

Stefan Leedham  
Business Analyst

**BOC RESPONSE TO NATIONALGRID (NG) CONSULTATION DOCUMENT  
ON MODIFICATION PROPOSAL TO THE USE OF SYSTEM CHARGING  
METHODOLOGY GB ECM 02 NEGATIVE DEMAND TARIFFS, 3 AUGUST  
2005**

BOC has reviewed the NG document dated 3 August 2005 and welcomes the opportunity to respond to the modification with the following comments:

1. BOC has been a constant respondent on the subject of use of system charging methodology having responded in December 2004 and again in May 2005 in reply to the questionnaire. Before these responses BOC has responded to many other consultations on TNUOS.
2. BOC is particularly concerned about the increases in TNOUS costs it has suffered since 2003/4.
3. BOC does not support NG's preferred option 5 of altering the G/D split from the present 27/73 to 0/100.
4. BOC believes that adopting this modification does not allow NG to better meet its licence obligations viz. :

- To facilitate effective competition in generation and supply of electricity

BOC believes that the electricity market is not presently sufficiently liquid or competitive to ensure that the reduction in TNUOS charges by generators would be passed on to customers. The generators would indeed have a windfall gain. Also those generators who are part of a vertically integrated generation and supply organisation would be at a greater advantage over the few remaining suppliers without matched generation assets.

- To result in charges which reflect, as far as reasonably practicable, the costs incurred by Transmission Licensees.

BOC believes that charging all TNOUS charges to demand customers cannot be cost reflective as it is undeniable that the generators use NG system assets and this must result in costs being incurred.

1. BOC also believes that by charging all TNOUS to demand customers NG is not following its obligation under Condition C7 of its Transmission Licence to ensure it does not unduly discriminate between classes of customer.
2. BOC believes that to change the G/D split would cost BOC and other large customers many thousands of £ per year in extra costs and this is not a proportionate response to negative demand charges applying to about 30MW in 50,000 MW
3. BOC believes that NG should continue to operate the present arrangements using a collar to effectively bring any negative demand charges to zero.

4. BOC believes that the incentive not to generate with imbedded plant or increase demand at times of system peak would in any case tend to be inhibited by the likelihood of higher energy prices at these times.

Hugh Mortimer, 8 August 2005

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