

PRE-CONSULTATION DOCUMENT

GB ECM-15

**Long-term Fixed Transmission Network Use of
System (TNUoS) Tariffs**

October 2008

This pre-consultation has a 28 day period for response. Comments should therefore be emailed to sarah.a.hall@uk.ngrid.com no later than **Friday 28th November 2008**.

Table of Contents

1	Executive summary	3
2	Introduction.....	3
3	Background.....	4
	3.1 Transmission Access Review (TAR)	4
	3.2 TNUoS charging principles	4
	3.3 Condition 4 Report.....	5
	3.4 Interaction with Transmission Access Review	6
	3.5 Interaction with Local Asset Charging	6
4	Options	7
	4.1 Fixing the locational and the residual or only the residual	7
	4.2 Basis of the tariff: Prevailing or forecast	9
	4.3 Treatment of Inflation.....	10
5	Views of the Working Group.....	11
6	Responses.....	12
	APPENDIX 1	13

1 Executive summary

This pre-consultation document explains the options considered by the Transmission Access Review (TAR) Working Group 2 for National Grid's proposal to modify the way in which the Transmission Network Use of System (TNUoS) generation tariff is calculated and levied, in light of the CUSC Amendment Proposal CAP165. CAP165 proposes that generators book long-term transmission entry access rights and provide User commitment for this booking. Under these arrangements it may be appropriate for National Grid to provide Users with long-term fixed tariffs allowing the industry to more efficiently manage the risks associated with tariff changes and therefore promote competition in the generation of electricity.

The document has been published on the National Grid charging website at the following address:

<http://www.nationalgrid.com/uk/Electricity/Charges/modifications/uscmc/>

Following discussion at the TAR Working Group 2, this pre-consultation presents three variations on a method for the calculation of long-term fixed tariffs for further industry comment, namely:

- Fixing the wider locational and the residual parts of the tariff or fixing only the wider locational element of the tariff
- Basis of the fixed tariff: prevailing tariff or forecast tariff
- Treatment of inflation

This pre-consultation has a 28 day period for response. Comments should therefore be emailed to sarah.a.hall@uk.ngrid.com no later than **Friday 28th November 2008**.

2 Introduction

National Grid is obliged under its 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 times 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) to facilitate competition in the sale, distribution and purchase of electricity;
 - (b) to result in charges which reflect, as far as reasonably practicable, the costs (excluding any payments between transmission licensees which are made under and in accordance with the STC) incurred by transmission licensees in their transmission businesses; and

- (c) that, so far as is consistent with sub-paragraphs (a) and (b), the Use of System charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses.

The purpose of this pre-consultation document is to set out the options available for National Grid's proposal to modify the Statement of the Use of System Charging Methodology to introduce long term fixed TNUoS tariffs with a view to better meeting the relevant Transmission Licence objectives set out above, and invite industry views on those options presented.

3 Background

3.1 Transmission Access Review (TAR)

National Grid presented a suite of CUSC Amendment Proposals to the CUSC Amendments Panel meeting on Friday 25th April, 2008. Subsequently, the Panel recommended that three Working Groups were established to further consider the Amendment Proposals, which can be viewed on the National Grid website:

<http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/amendments/currentamendmentproposals/>

The amendment which has initiated this pre consultation on long-term fixed charges is CAP165: Finite Long-term Entry Rights. CAP 165 proposes the introduction of temporally defined finite long-term entry access rights and associated User commitment. Existing generators would nominate the number of years for which they require long-term entry access rights to the GB transmission system and underpin this with User commitment in the form of a liability to pay associated charges and a requirement for financial security to be put in place to cover credit risk. New generators (and any existing generators requesting an increased level of long-term entry access) would be required to book a defined number of years of entry access rights and provide the associated User commitment. User causing investment in the transmission network would need to provide a minimum of 8 years worth of commitment.

Working Group 2 was established with the responsibility for assisting the CUSC Amendments Panel in the evaluation of CUSC Amendment Proposals CAP165 and 166, and considering whether each of them better facilitates achievement of the applicable CUSC objectives. Working Group 2 also considered whether it would be appropriate to offer generators long-term fixed TNUoS tariffs in line with the increased level of commitment generators would be providing under CAP165. This pre-consultation presents, for industry comment, a summary of the options discussed by the Working Group regarding the long term fixing of TNUoS tariffs.

The Working Group report for CAP165 was published on the 3rd October 2008. This report is also available on the National Grid website. The closing date for responses to the CAP165 consultation is Friday 31st October

3.2 TNUoS Charging Principles

Transmission Network Use of System charges reflect the cost of installing, operating and maintaining the transmission system for the Transmission Owner (TO) activity function of the transmission businesses of each transmission licensee.

A Maximum Allowed Revenue (MAR) defined for these activities and those associated with pre-vesting connections is set by the Authority at the time of the TO's price control review for the succeeding price control period. TNUoS charges are set to recover the MAR, allowing for any K_t adjustment for under or over recovery in a previous year, net of the income recovered through pre-vesting connection charges.

The basis of charging to recover allowed revenue is the Investment Cost Related Pricing (ICRP) methodology, which was initially introduced by National Grid in 1993/94 for England and Wales. The principles and methods underlying the ICRP methodology were set out in the National Grid document "Transmission Use of System Charges Review: Proposed Investment Cost Related Pricing for Use of System (30 June 1992)".¹

The underlying rationale behind TNUoS charges is that efficient economic signals are provided to Users when services are priced to reflect the incremental costs of supplying them. Therefore, charges should reflect the impact that Users of the transmission system at different locations would have on the TO's costs, if they were to increase or decrease their use of the respective systems.

The TNUoS tariff comprises two separate elements. Firstly, a locationally varying element derived from the Direct Current Load Flow (DCLF) ICRP transport model to reflect the costs of capital investment in, and the maintenance and operation of, a transmission system to provide bulk transport of power to and from different locations. In 2008/9, locational generation tariffs range from between £18.15/kW (Northern Scotland) and -£12.63/kW (Peninsula), whilst locational demand tariffs range from between £9.75/kW (South Western) and -£12.55/kW (Northern Scotland).

Secondly, a non-locationally varying element 'the residual element' relating to the historic and 'lumpy' investment in both locational and non-locational assets (i.e. substation assets) in addition to the provision of residual revenue recovery. In 2008/9, the residual tariff is £4.11/kW for generation and £15.40/kW for demand. The combination of the locational and residual elements forms the total TNUoS tariff.

Tariffs are recalculated annually and published in January for charges commencing the following April. This ensures that charges remain cost reflective and the transmission licensees can fund their operations in accordance with their price control allowances.

3.3 Condition 4 Report

In October 2006 National Grid published the Charging Condition 4 Report² as part of its response to the Authority's charging conditions. Condition 4 required National Grid to invite views and consult upon ways by which Users could choose to contract for rights to use the transmission system with TNUoS charges fixed for a period of more than one year. Over a fourteen month period, National Grid consulted Users on long-term fixed price products.

¹ Transmission Use of System Charges Review: Proposed Investment Cost Related Pricing for Use of System (30 June 1992) http://www.nationalgrid.com/NR/rdonlyres/58084876-C547-4099-A5EC-4E8E6A09D825/26767/Scanjob_20080528_105159.zip

² Condition 4 Report http://www.nationalgrid.com/NR/rdonlyres/10F7A5E9-2248-4136-983C-995F7AD01950/14449/Condition4ReportfortheAuthority_161006.pdf

National Grid concluded that the development of multiple-year fixed-price charges should not be progressed at that stage on the grounds that:

- remaining Users on variable tariffs would be unwilling to be exposed to the financial consequences arising from differences between fixed and variable tariffs;
- that the trade-off between risks and duration covered by a hedging contract and the associated premium is such that only very limited risks and short durations could be hedged against, which is likely to limit the attractiveness and uptake of such arrangements;
- Users were concerned that it was inappropriate for National Grid to set tariffs and simultaneously offer a hedge for changes to tariffs; and
- the provision of cost-reflective locational signals could be restricted and that may be expected to result in less efficient outcomes.

In the light of the CAP165 amendment proposal of finite transmission entry rights, National Grid considers that it is an appropriate time to review the conclusions of the Condition 4 Report and consider if long-term fixed charges may be appropriate for generators under CAP165 arrangements.

3.4 Interaction with Transmission Access Review

Under the current TNUoS charging arrangements, tariffs are set on an annual basis and fixed during each whole financial year. Currently generators are only liable to pay the current financial year's TNUoS charges. Generators have the option to reduce TEC up to 5 days before the beginning of the next financial year to avoid paying charges for the next financial year.

Under the CAP165 proposal, generators would be required to provide an end date for their wider access right either at transition to the new regime or when they apply for a new connection. Under these arrangements, generators become liable for the charges for the full duration of their wider access booking. If these new access arrangements were implemented with the current charging arrangements generators would become liable for charges without certainty of what those charges would be. Providing the option to fix the TNUoS charge would give Users certainty of their charges and therefore certainty of their liability. Fixed long-term tariffs aim to allow the industry to more efficiently manage the risks associated with tariff changes and therefore promote competition in the generation of electricity.

CAP165 only proposes changes to the transmission access arrangements for generators. In line with the CAP165 proposal this pre-consultation only envisages introducing fixed charges for generation Users. No change to the proportion of revenue recovered from demand and generation is envisaged under this proposal.

We invite views regarding whether respondents believe fixed price tariffs would be appropriate under the CAP165 arrangements?

3.5 Interaction with Charging Arrangements for Generator Local Assets

Under the CAP165 arrangements generators can access the network with a local connection and use short-term access products. In addition to their local connection generators can also book long-term access to the wider transmission network.

GBECM11 – Charging Arrangements for Generator Local Assets³ describes a method for splitting the locational part of the TNUoS tariff into a local tariff and a wider tariff. GBECM15 focuses on the treatment of the wider part of the locational tariff.

Under the current proposal for CAP165 it is not certain whether users would have a finite or evergreen access right to their local connection. If users make a long-term finite commitment to their local connection it may also be appropriate to fix the local part of their tariff for the period of their local access booking.

We invite views on whether respondents believe users should have the option to fix the local part of their locational tariff?

4 Options

When considering fixing the TNUoS charges a compromise needs to be made between the certainty and the cost reflectivity of the tariff. Currently Users' tariffs are fixed during financial years. Under the current regime this provides a reasonable compromise of cost reflectivity and certainty. Under a regime where Users provide long-term User commitment it may be appropriate to give more emphasis to the certainty of the charge. Offering a long-term fixed tariff would give Users much improved certainty of their tariff but the side effect of fixing the tariff is that it inevitably becomes less cost reflective as system conditions change. This compromise can be affected by a number of factors which are considered in the following options for fixing the TNUoS tariff:

- Fixing the wider locational and the residual tariff or fixing only the wider locational element of the tariff
- Basis of the fixed tariff: prevailing tariff or forecast tariff
- Treatment of inflation

4.1 Fixing the wider locational and the residual parts of TNUoS or only the wider locational element of the tariff

As described above, the total TNUoS tariff comprises a locational element which is calculated using the DCLF model and a non-locational element. The locational element gives a signal to generators regarding the effect of their location on transmission costs. National Grid has a fixed maximum allowed revenue. The non-locational (or residual) element of the charge is used to cover the remainder of the revenue after the locational revenue has been calculated.

CAP165 envisages a split between local and wider access to the transmission network. This section of the report discusses whether it is more appropriate to fix the wider locational and residual parts of the TNUoS tariff or only the wider locational element.

³ GBECM11 http://www.nationalgrid.com/NR/rdonlyres/27F920CA-C678-4D91-A3D1-701E909BDAFB/28281/GBECM11ConcReport_final_HR.pdf

Fixing the wider locational and the residual parts of the TNUoS tariff

For Users to have certainty of their charge for the duration of their wider transmission access booking both the wider element and the residual parts of the tariff would need to be fixed. Currently the residual element of TNUoS is calculated annually such that it recovers the MAR. The implication of fixing the residual TNUoS charge is that the revenue may be under or over recovered. Although National Grid could try to reduce the size of this under or over-recovery by making a forecast of the required charges, the forecast would become less accurate with time and an under or over recovery would occur. This could happen where the access booking runs over more than one price control period and MAR is uncertain, when MAR changes within price control, when industry reform takes place and the structure of the charges changes or when the forecast generation background is inaccurate (although it is hoped that the forecast generation background would improve with the introduction of finite rights).

To ensure that the MAR is recovered, a method for collecting the under or over-recovery resulting from the fixed charges would need to be developed. If generators were given the choice whether they fix or float, the under or over recovery could be collected from generators who had chosen to float. This would cause a cross subsidy as the floating Users would be taking on the risk of any uncertainty in setting cost reflective long-term fixed tariffs.

If all generators fixed their wider locational and their residual tariff, the under or over recovery could be taken into account when calculating the fixed tariffs for new generators. This would cause a cross subsidy between existing and new Users. The new Users would pay tariffs which would be affected by the uncertainty of tariff setting before they connect to the network.

Another method for collecting the under or over recovery is to levy a separate charge on all generators. Charging all generators an additional charge would mean that their total charge was no longer fixed. However, if the additional charge was shared evenly between generators, having the additional charge would not change the relative difference between generators' tariffs. This would have a similar effect to fixing only the wider locational element of the charge except that a larger proportion of the charge would be fixed.

Fixing only the wider locational element of TNUoS

Giving generators the option to fix only the wider locational element of the TNUoS charge would not provide generators with a full certainty of charge. It would however allow generators to fix their charge relative to other generators as the residual could be charged evenly across all generators. Generators who chose to fix their wider locational tariff would know how much they would be required to pay for the wider locational element of their TNUoS for the duration of the booking. Generators who chose to float would as now have their tariff calculated on an annual basis using the DCLF model. All generators would be charged the residual in the same manner.

The implication of fixing only the wider locational element of TNUoS is that the risk of under and over recovery would be shared by the whole industry through the residual charge. This method causes cross subsidies between Users.

We invite views on whether respondents believe it would be more appropriate to fix the wider locational and the residual part of the tariff or only the wider locational part of the tariff?

We invite views on whether respondents believe it should either be compulsory for users to fix their tariffs or users should be able to choose if they have a fixed or floating tariff?

4.2 Basis of the Tariff: Prevailing Tariff or Forecast Tariff

To ensure the long-term fixed tariff retains a level of cost reflectivity the tariff needs to be based initially on calculations from the DCLF model. The long-term fixed tariff could be based on either using the prevailing tariff or a forecast of the tariff.

Basing the charge on the current tariff would be cost reflective in the first year and generally become less cost reflective over time. Appendix 1 shows the variation of TNUoS tariffs over the last seven years.

Basing the long-term fixed tariff on the prevailing TNUoS charge gives a simple and transparent basis for the tariff. This long-term fixed tariff would become less cost reflective over time as factors which would have been taken into account by the transport model were now not, such as developments in the transmission system, new Users connecting and old Users leaving the network.

This reduction in cost reflectivity could be mitigated to some extent by using a forecast of the tariff. This forecast would take into account the changing generation background, forecast changes in demand and development of the transmission system. Under the CAP165 proposals for finite transmission access rights information given to National Grid by generators regarding the relinquishing of access rights would be improved this should aid the accuracy of the forecast charges.

Currently National Grid produces a 5 year forecast of the change in the locational element of TNUoS. The length of this forecast is limited to five years due to the generation and demand data which can be reasonably forecast, beyond this point projects and actual network expansion is not sufficiently engineered to be used in a load flow model. This forecast currently only predicts the locational TNUoS tariff. The forecast does not take into account regulatory changes or charging methodology changes. A fixed tariff could only be based on a profiled forecast for the first five years after this the fixed tariff would be based on the final tariff in the final year of the profile.

In 2008/09 approximately £365 million will be recovered through generation charges £50 million from the locational element of TNUoS and £315 million from the residual. If all Users had fixed their locational tariffs in 2006/07 at the forecast price, the residual would have needed to be increased by approximately £0.7 million due to an under recovery (compared with the actual recovery from the locational in 2008/09) by the forecast locational element. If all Users had fixed their locational tariffs in 2006/2007 at the prevailing TNUoS charge, the recovery from the residual would need to be increased by approximately £17.2 million due to an under recovery by the locational element. If in 2006/07 generators had the choice of whether they fixed or not, the under recovery from the locational element would be even greater as in the majority of cases Users will have chosen the option which resulted in them having the lowest locational charge. This would lead to more revenue being recovered through the residual.

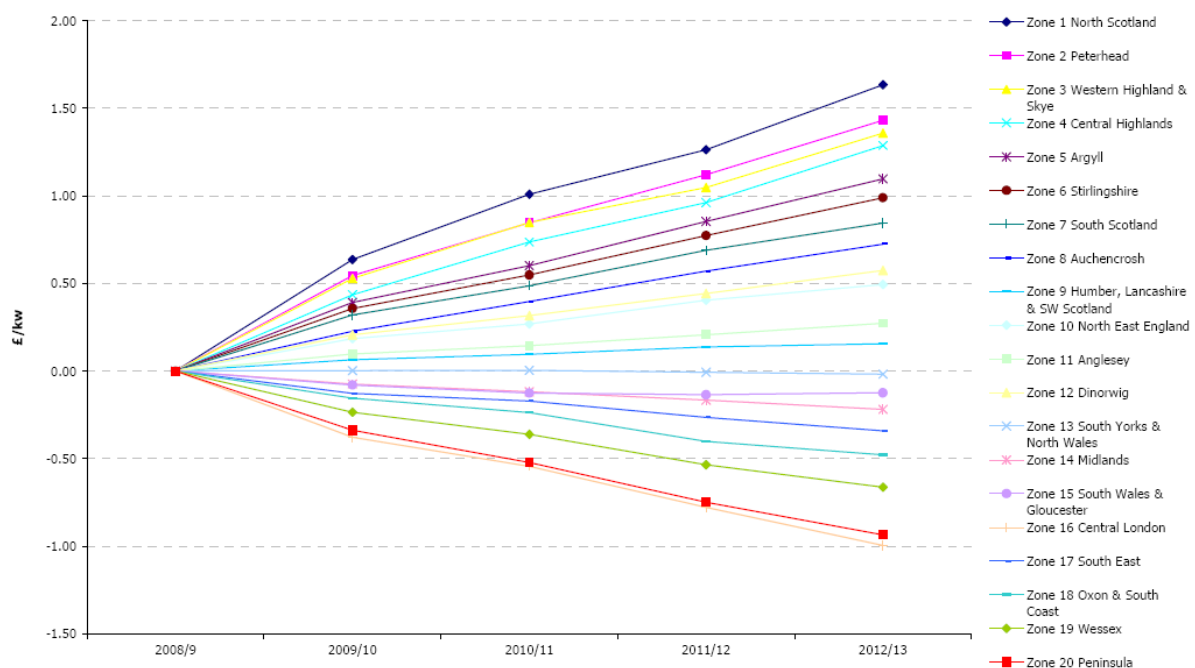
We invite views on whether respondents think it would be more appropriate to base the long term fixed tariff on the prevailing TNUoS tariff or a forecast of the TNUoS tariff?

4.3 Treatment of Inflation

A further factor which will have an important effect on setting long-term fixed tariffs is inflation. Inflation is currently taken into account in the tariffs through the inflation of the expansion constant in the DCLF model (which affects the locational tariff) and the inflation of National Grid's allowed revenue (which affects the residual). Both these factors are linked to the Retail Price Index (RPI). If tariffs are no longer calculated on an annual basis changes in the tariffs through these inputs to the calculation will not be taken into account.

The following graph shows the effect of inflating the expansion constant by RPI on forecast generation⁴. The baseline forecast does not take into account inflation; this graph shows the deviation from the baseline if you include a forecast of RPI into the calculation of the forecast tariff.

In summary, the variances from the baseline analysis are proportional to the locational element of the zonal generation tariffs, with those generation zones with the largest locational tariffs impacted most significantly. Over several years the difference between the baseline and the forecast including inflation becomes significantly different.



The tariffs would be most cost reflective if they increase in line with the expansion factor and the allowed revenue. As these factors are based on RPI it follows that the long-term fixed tariffs should be linked to RPI. The effect of not including RPI is significant enough for it to reduce the cost reflectivity if it is not included.

⁴ Data from 5 Year Forecast of TNUoS Charges : <http://www.nationalgrid.com/NR/rdonlyres/44ED420D-A08A-412B-809E-87942C16CF6F/21878/5yearforecastofTransmissionNetworkUseofSystemtarif.pdf>

The Working Group considered whether National Grid should set a definite tariff which took into account a forecast of RPI or whether generators should be given a tariff and told that it will increase in line with RPI.

RPI is difficult to accurately predict in the long term. If National Grid provided a tariff that included a forecast of RPI this would provide a more cost reflective calculation of the tariff than if RPI was not included but the cost reflectivity of the tariff would be to some extent dependent on the accuracy of the prediction of RPI. Including a forecast RPI in the tariff would give generators certainty of their charge.

If National Grid did not include inflation in the calculation of long term fixed tariffs but told generators that their final charge would take RPI into account the certainty of the charge would be reduced. As National Grid does not have any privileged information regarding the prediction of RPI Users could make their own forecast of RPI. Allowing the final tariff to float with inflation would improve the cost reflectivity of the charge.

We invite views on how respondents think inflation can be most appropriately included in long-term fixed TNUoS tariffs?

5 Views of the Working Group

The Working Group was concerned about the party or parties exposed to the financial consequences resulting from the differences between fixed and variable prices. The Working Group voiced concern that it would be inappropriate to recover any under or over recoveries resulting from the fixing of charges through the residual component of the tariff. This would put the risks associated with fixing on other generators. The majority of the Working Group believed this would lead to an inappropriate cross-subsidy between Users.

If generators were given the choice as to whether or not they should fix their whole tariff, generators who chose to float their tariff would carry the risk of any under or over recovery generated by other Users fixing. This would mean that as more generators fixed, the risks on floating generators would increase and leave the remaining floating generators forced into fixing their charges.

The group considered it was not appropriate for generators' tariffs to be effected by other generators choosing to fix. Some members of the group considered it may be more appropriate if National Grid accepted the risk of under and over recovery, other Users considered it would be more appropriate if a third party such as a financial institution took on the risk.

The Working Group considered that it was already possible for third parties to offer a financial product. The group considered that because of the uncertainty and risks associated with offering such a financial product the premium would be high.

Some of the working group considered that National Grid was an appropriate party to offer a financial fixing product because of its privileged position in the market. National Grid has a more in depth understanding of the potential risks and uncertainties and would be able to offer the product with a lower premium than third parties.

Some Working Group members voiced concern that it was inappropriate for National Grid to provide a hedge against the charges as it is also responsible for setting the charging arrangements and making investment decisions in England and Wales and could therefore influence tariff movements to its commercial advantage.

We invite views regarding whether it is appropriate for under and over recovery caused by fixed charges to be recovered from other generators through the residual or a separate charge?

We invite view regarding whether National Grid is the appropriate party to provide a hedge against tariffs?

6 Responses

Comments and views are invited on all of the issues raised in this pre-consultation document. To ensure that your comments and views are considered as part of National Grid's forthcoming consultation document, responses must be received by close of business on **Friday 28th November 2008**.

Comments are particularly welcome regarding:

We invite views regarding whether respondents believe fixed price tariffs would be appropriate under the CAP165 arrangements?

We invite views on whether respondents believe users should have the option to fix the local part of their locational tariff?

We invite views on whether respondents believe it would be more appropriate to fix the wider locational and the residual part of the tariff or only the wider locational part of the tariff?

We invite views on whether respondents believe it should either be compulsory for users to fix their tariffs or users should be able to choose if they have a fixed or floating tariff?

We invite views on whether respondents think it would be more appropriate to base the long term fixed tariff on the prevailing TNUoS tariff or a forecast of the TNUoS tariff?

We invite views on how respondents think inflation can be most appropriately included in long-term fixed TNUoS tariffs?

We invite views regarding whether it is appropriate for under and over recovery caused by fixed charges to be recovered from other generators through the residual or a separate charge?

We invite view regarding whether National Grid is the appropriate party to provide a hedge against tariffs?

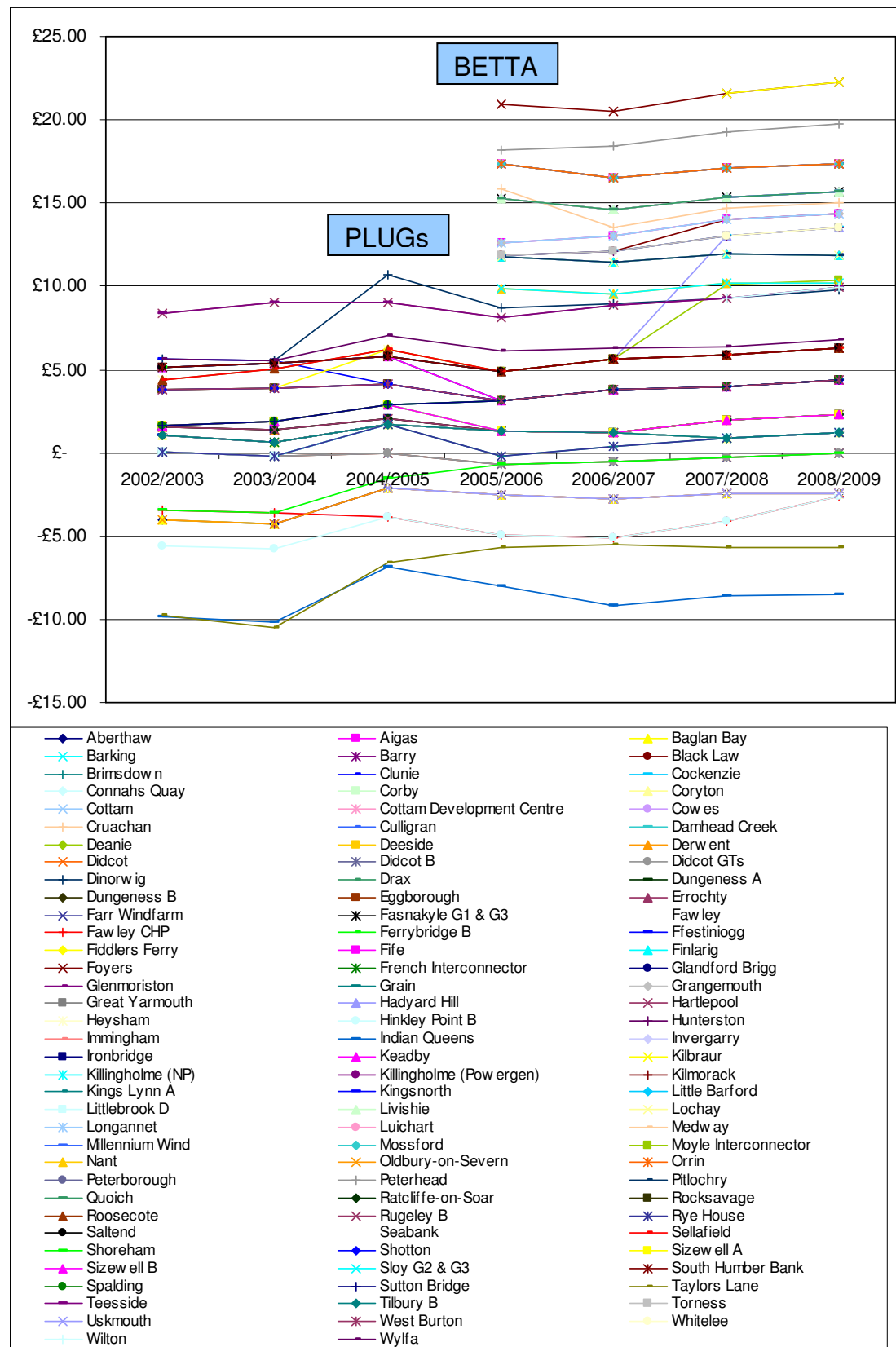
If you wish to provide comments on this pre-consultation document, responses are preferred via email to: sarah.a.hall@uk.ngrid.com

Alternatively, Users can send their comments in writing, addressed to:

Sarah Hall
Electricity Charging & Access Development
National Grid Electricity Transmission Ltd
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

If you have further queries, please do not hesitate to contact Sarah on 01926 654196.

Appendix One – TNUoS Tariffs 2002/2003-2008/2009



This chart shows the variation in TNUoS charges since 2002/2003. The main changes affecting the tariffs during this period are the introduction of PLUGs in 2004/2005, the introduction of BETTA in 2005/2006 and generators changing charging zones during rezoning.