

# **CONSULTATION DOCUMENT**

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

**UoSCM-M-12**

**Proposed change to the TNUoS Demand  
Monthly Charges Rules**

28 November 2003

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## 1. Executive Summary

This paper sets out for consultation National Grid's proposed modification to the Use of System Charging Methodology to amend the Transmission Network Use of System (TNUoS) rules for the determination of Demand Charges in relation to a User's provision of their forecast of demand. 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 these 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 incurred by National Grid in its Transmission Business; and
  - c. to take account of the developments in National Grid's Transmission Business.

In addition National Grid is obliged under Condition C7C 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.

The purpose of this document is to set out for consultation National Grid's proposal to modify the methodology regarding the determination of TNUoS Monthly Demand Charges in relation to the treatment by National Grid of a User's forecast of their half-hourly metered demand to be supplied to each BM Unit during the Triad, and a User's forecast of their non-half hourly metered energy to be supplied over the period 16:00 hrs to 19:00 hrs inclusive to each BM Unit.

It is proposed that this modification would better meet the Relevant Objectives in Licence Condition C7A 5 (a), (b) and (c) as listed above under (iii) a, b and c.

### 3. Background to the Issue

National Grid has concerns that a minority of Users do not comply with the spirit of the Connection and Use of System Code (CUSC) in respect of their provision of accurate demand forecasts for use by National Grid in calculating TNUoS demand charges for each User. This issue was raised with the industry at the September CUSC Panel meeting and resulted in the establishment of the CAP055 Working Group to consider National Grid's Amendment Proposal under "CAP055: Users' Demand Forecasts for TNUoS Charging"<sup>1</sup>. The Working Group presented its Final Report to the November CUSC panel, which agreed that the issue should proceed to industry consultation. This modification to National Grid's Use of System Charging Methodology is raised as a consequence of the proposal developed by the CUSC Working Group.

National Grid determines the TNUoS Demand Charges for each User by applying the relevant zonal tariff to each User's forecast of their demand for the demand zones identified within The Statement of the Use of System Charges. Users are required to submit a forecast of their demand within the timescales stipulated in Section 3 of the CUSC and as requested by National Grid. Current CUSC rules are ambiguous in respect of the determination of a User forecast where a User fails to comply with its obligations as set out within the CUSC. Furthermore, the CUSC does not place any obligation on Users to ensure the forecast reasonably reflects their anticipated demand within the Financial Year.

Users are required to forecast demand for each BM Unit within a demand zone, with half-hourly and non-half hourly values submitted independently. Annual charges calculated from such forecast values will be invoiced over the Financial Year and divided evenly by month, with charges being adjusted where required by User submission of further quarterly forecast updates. Reconciliation of annual charges will be undertaken, in accordance with the CUSC, after the year end using available settlement data. This reconciliation will be undertaken initially by 30<sup>th</sup> June following the Financial Year end and as triggered by initial settlement data. Final reconciliation will be undertaken as soon as reasonably practicable following receipt of final settlement data and typically by July in the second year after the Financial Year end.

National Grid considers that the current arrangement described above does not adequately provide CUSC parties with sufficient incentive to provide accurate demand forecasts. A minority of Users choose to supply demand forecasts that are demonstrably inaccurate. The absence of sufficiently robust rules to ensure the accuracy of Users' demand forecasts may result in reconciliation becoming the primary means for levying demand charges to some Users rather than by commonly applying the principle of monthly invoicing at a reflective level of actual System use. This presents potential issues of:

- i) Inequality between Suppliers where TNUoS demand charges result from User forecasts that are of varying degrees of accuracy
- ii) Competition between Suppliers
- iii) Increased National Grid exposure to Supplier failure

This consultation is consequential to CUSC Amendment Proposal CAP055 and it is therefore important that the consultation periods for this modification to the Use of System charging methodology and CAP055 coincide. National Grid will therefore run

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<sup>1</sup> CAP055 Amendment Proposal and Consultation Document available on the CUSC website at [www.nationalgridinfo.co.uk/cusc/](http://www.nationalgridinfo.co.uk/cusc/)

the two consultations in parallel, with the same consultation timescales, to allow Users to consider the issues raised by these consultations and formulate their responses accordingly.

## **4. Explanation of the Issues**

### **4.1 User Provision of a Reasonable Demand Forecast**

The CUSC requires a User to submit a demand forecast for each of their BM Units within a demand zone. Demand forecasts for the BM Unit may reflect both half-hourly (HH) metered and non-half hourly (NHH) metered demand, with HH demand forecasts reflecting Triad demand and NHH demand forecasts reflecting demand over the period 16:00 hrs to 19:00 hrs for every day within the Financial Year.

As previously described, for monthly demand charging purposes a User may currently submit, in accordance with the CUSC, demand forecasts that are not reflective of their intended usage pattern, or by default, have a zero forecast where the User fails to submit a forecast. Consequently a User may avoid, or limit, their TNUoS demand charges levied monthly within year and thereby receive potential cashflow advantage over competitors where such demand charges are not realised until forecast flows are reconciled with actual demand data after the Financial Year end.

National Grid considers that Users should provide demand forecasts for half-hourly and non-half hourly demand that reasonably reflect their expected system usage for the Financial Year, such that demand charges are levied as near to a User's actual demand level and period of occurrence as possible. This is consistent with National Grid's Transmission Licence obligation of levying charges that reflect costs incurred in its transmission business (C7A 5(b)).

National Grid's ability to levy demand charges near to the time of usage and reflective of a true level of usage is key to mitigating its exposure to Supplier failure in terms of incurred but unpaid use of system charges. National Grid's potential exposure to bad debt has consequences for the entire industry given its status as a regulated monopoly.

It should be noted that reconciliation of demand charges is intended to produce residual reconciliation charge values that reflect any difference between a reasonable forecast and actual demand.

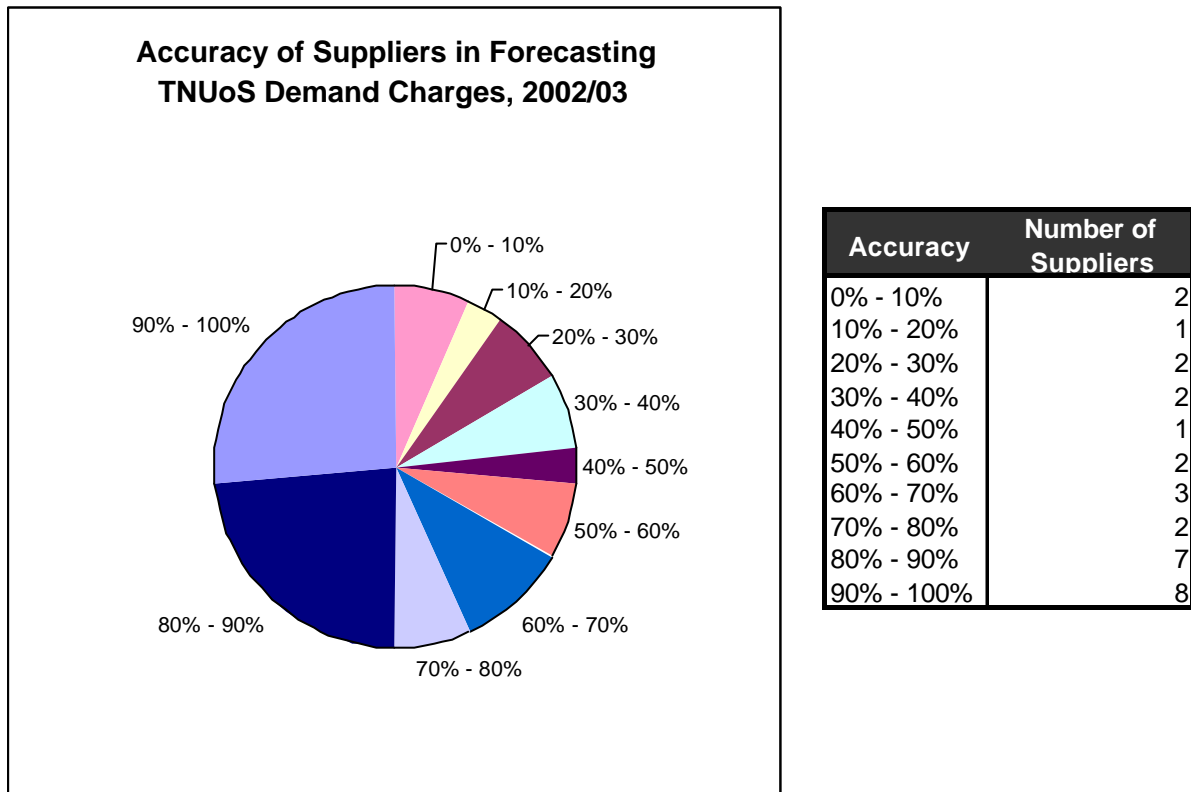
CUSC Amendment Proposal CAP055 seeks to define a reasonable forecast within the CUSC and therefore provide a trigger whereby a User's forecast may be replaced in line with the methodology set out within The Statement of the Use of System Charging Methodology. The proposed methodology, to be published in section 4 of the Statement, is described in this document.

### **4.2 Forecast Accuracy of TNUoS Demand Charges**

The information presented in Figure 1 below illustrates the accuracy of forecasts submitted by Users for the period 2002/03. This information reflects the accuracy of both over and under forecasting, meaning that the 90 to 100% segment reflects a divergence from 100% accuracy, whether positive or negative, of up to 10%.

Approximately 50% of suppliers have an over or under forecast accuracy within 20% of their actual TNUoS demand charges. However, this information demonstrates that a significant number of suppliers submit demand forecasts that upon reconciliation are shown to be considerably adrift from their actual use of National Grid's transmission system. Consequently, TNUoS monthly demand charges for some Users will be low/high relative to their TNUoS reconciliation demand charges as a result of an inaccurate demand forecast by the User.

**Figure 1: Accuracy of Suppliers in Forecasting TNUoS Demand Charges 2003/03**



TNUoS Demand charges for those Users exhibiting a demand under forecast error of greater than 20% account for approximately £15m of National Grid transmission revenue, of which currently £10m is recovered at reconciliation rather than through monthly charging.

National Grid believes that the Use of System Charging Methodology modification proposal described in the following section and associated CUSC Amendment Proposal, if implemented, would encourage Users to provide forecasts that reasonably reflect their expected demand in preference to a National Grid imposed forecast where a User is deemed to have submitted an unreasonable forecast of their demand.

## 5. Proposed Modification

### 5.1 Proposed Changes to the Use of System Charging Methodology

This Modification proposes to change the Use of System Charging Methodology to allow National Grid to use an alternate demand forecast in the event that a User submits demand forecast(s) which are deemed unreasonable in accordance with the CUSC.

Where a User's forecast is deemed unreasonable for a BM Unit within a demand zone, in accordance with the CUSC, National Grid proposes to replace the User's forecast with a National Grid forecast determined in accordance with the methodology described below.

National Grid recognises that certain factors may impact upon a User's forecast of demand that may not be readily apparent to National Grid. Where a forecast is deemed unreasonable, in accordance with the CUSC, National Grid will explore the reasons for any such finding with the User before determining whether to replace a User's forecast with its own forecast. For example, a User may provide evidence demonstrating that their supply portfolio has changed, or will change, significantly during the course of the Financial Year.

Any subsequent quarterly forecast update submitted by a User that is deemed reasonable, in accordance with the CUSC, will be used for demand charging purposes in preference to any previous forecast determined, and used, by National Grid where an earlier User forecast was deemed unreasonable.

The methodology for calculating a National Grid replacement forecast is described below, with proposed changes to the text in the Statement of the Use of System Charging Methodology contained in Appendix 1 to this document. The proposed methodology is intended to be transparent and based on actual historic data available to National Grid and will be used consistently within the bounds of a CUSC definition of a reasonable forecast where a User is unable to provide compelling evidence that their own forecast is accurate.

For each BM Unit within a demand zone, where a User has submitted a forecast which in accordance with the CUSC has been deemed to be unreasonable, and which is not resolved through further evidence provision from the User to National Grid's satisfaction, National Grid proposes that it will:

For existing Users:

Create a forecast for Half-Hourly (HH) metered demand and Non-Half Hourly (NHH) metered energy consumption based on the percentage difference between the Financial Year to date values and those evidenced in the corresponding period for the previous year. This percentage difference would then be applied to the previous year's Triad demand in the case of HH demand, and to the previous year's total energy consumption for NHH demand.

For new Users who have completed a Use of System Supply Confirmation Notice in the current Financial Year:

Create a forecast for Half-Hourly (HH) metered demand and Non-Half Hourly (NHH) metered energy consumption based on the percentage difference between the last complete month for which settlement data is available and the corresponding month

in the previous year. This percentage difference would then be applied in the case of:

- i) HH demand to the average weekday settlement period 35 HH demand in the last complete month and;
- ii) NHH energy consumption applied to the latest month's energy consumption and extrapolated forward for the remainder of the Financial Year before adding energy consumption in the previous months.

The proposed new text for The Statement of the Use of System Charging Methodology can be found in Appendix 1 to this document.

## **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;
- levying 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:

- by ensuring consistent treatment between Users incurring TNUoS demand charges;
- by ensuring TNUoS charges are reflective of system usage and levied near to the time of occurrence;
- by providing a transparent charging methodology that incentivises Users to submit accurate demand forecasts for the purposes of calculating TNUoS demand charges;
- by ensuring charging methodologies reflect developments within National Grid's Transmission Business.

The modification would also ensure that National Grid's charges do not discriminate between any Users or classes of User, as required under Licence Condition C7C of the Transmission Licence, by ensuring the consistent treatment of Users incurring charges where such charges are based upon the Users' own forecast of demand.

## **5.3 Implementation date**

This modification is proposed to be implemented on 16 February 2004.

#### **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. Some suggested text in line with the initial proposal is shown in Appendix 1 to this document.

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

The Statement of Use of System Charges will not change as a result of this modification proposal.

#### **5.6 Indicative Impact on the Use of System Charges**

It is reasonably expected that the overall level of TNUoS Demand Charges will be unchanged.

Demand charge reconciliation is a residual mechanism intended to address reasonable forecast variance to actual demand. This modification proposal, if implemented, would ensure reconciliation fulfils this residual role rather than invoicing values that properly should be included within Monthly Charge processes.

#### **5.7 Impacts on Other Industry Documents**

An amendment is proposed to the Connection and Use of System Code in conjunction with this modification proposal to the Use of System Charging Methodology. The CUSC Amendment Proposal (CAP055) would introduce, if implemented, a reasonable forecast trigger where a demand forecast failing the CUSC requirement would be eligible to be replaced for TNUoS demand charging purposes with a National Grid demand forecast determined in accordance with this modification proposal to the Use of System Charging Methodology.

## 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 **4 January 2004**. If you wish to provide comments on this modification proposal, responses are welcome via email to:

[stephen.emmerson@ngtuk.com](mailto:stephen.emmerson@ngtuk.com)

Or alternatively, written comments may be addressed to:

Stephen Emmerson  
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 Stephen on **01926 656214**.

## Appendix 1 – Revised wording of Chapters 4 and 6 of the Use of System Charging Methodology

### Chapter 4 - Demand Charges

Insert the following new Paragraph 4.12 and new Paragraph 4.13 within the Monthly Charges section:

4.12 Users should submit reasonable demand forecasts in accordance with the CUSC. National Grid shall use the following methodology to derive a forecast to be used in determining whether a User's forecast is reasonable, in accordance with the CUSC, and this will be used as a replacement forecast if the User's forecast is deemed unreasonable. National Grid will, at all times, use the latest available Settlement data.

For existing Users:

- i) The User's Triad demand for the preceding Financial Year will be used where User settlement data is available and where National Grid calculates its forecast before the Financial Year. Otherwise, the User's average weekday settlement period 35 half-hourly metered (HH) demand in the Financial Year to date is compared to the equivalent average demand for the corresponding days in the preceding year. The percentage difference is then applied to the User's HH demand at Triad in the preceding Financial Year to derive a forecast of the User's HH demand at Triad for this Financial Year.
- ii) The User's non-half-hourly metered (NHH) energy consumption over the period 16:00 hrs to 19:00 hrs every day in the Financial Year to date is compared to the equivalent energy consumption over the corresponding days in the preceding year. The percentage difference is then applied to the User's total NHH energy consumption in the preceding Financial Year to derive a forecast of the User's NHH energy consumption for this Financial Year.

For new Users who have completed a Use of System Supply Confirmation Notice in the current Financial Year:

- iii) The User's average weekday settlement period 35 half-hourly metered (HH) demand over the last complete month for which National Grid has settlement data is calculated. Total system average HH demand for weekday settlement period 35 for the corresponding month in the previous year is compared to total system HH demand at Triad in that year and a percentage difference is calculated. This percentage is then applied to the User's average HH demand for weekday settlement period 35 over the last month to derive a forecast of the User's HH demand at Triad for this Financial Year.
- iv) The User's non-half-hourly metered (NHH) energy consumption over the period 16:00 hrs to 19:00 hrs every day over the last complete month for which National Grid has settlement data is noted. Total system NHH energy consumption over the corresponding month in the previous year

is compared to total system NHH energy consumption over the remaining months of that Financial Year and a percentage difference is calculated. This percentage is then applied to the User's NHH energy consumption over the month described above, and all NHH energy consumption in previous months is added, in order to derive a forecast of the User's NHH metered energy consumption for this Financial Year.

**4.13 Appendix TN-7: Example: Determination of National Grid's Forecast for Demand Charge Purposes** illustrates how the demand forecast will be calculated by National Grid.

The existing paragraphs 4.12 to 4.21 should be renumbered by an increment of 2, such that they become paragraphs 4.14 to 4.23.

## **Chapter 6: Data Requirements**

### **Data Required for Calculating Users' Charges**

Amend paragraph 6.5 to read:

- 6.5 In order for National Grid to calculate Users' TNUoS charges, Users who are Suppliers shall provide to National Grid forecasts of half-hourly and non-half-hourly demand in accordance with paragraphs 4.11 and 4.12 and in accordance with the CUSC.

Insert a new appendix numbered TN-7

### **Appendix TN-7: Example: Determination of National Grid's Forecast for Demand Charge Purposes**

National Grid will use the latest available settlement data for calculation of HH demand and NHH energy consumption forecasts for the Financial Year.

The Financial Year runs from 1<sup>st</sup> April to 31<sup>st</sup> March inclusive and for the purpose of these examples the year April 2004 to March 2005 is used.

Where the preceding year's settlement data is not available at the time that National Grid needs to calculate its forecast, National Grid will use settlement data from the corresponding period in Financial Year minus two unless indicated otherwise.

All values used with the examples are purely for illustrative purposes only.

**i) Half Hourly (HH) Metered Demand Forecast – Existing User**

At the time of calculation of a HH demand forecast before the relevant Financial Year (approximately 10<sup>th</sup> March), National Grid will be aware at a system level which dates will be used for the determination of Triad, however, National Grid may not have settlement data at a User level if the Triad dates were to span a period that includes the latter half of February.

When undertaking forecasting before the relevant Financial Year, National Grid will use the User's Triad demand for the previous year for its forecast providing it holds User settlement data for this period, thus:

$$F = T$$

where:

F = Forecast of User's HH demand at Triad for the Financial Year

T = User's HH demand at Triad in Financial Year minus one

Where National Grid determines its forecast within a Financial Year:

$$F = T * D/P$$

where:

F = Forecast of User's HH demand at Triad for the Financial Year

T = User's HH demand at Triad in the preceding Financial Year

D = User's average half hourly metered demand in settlement period 35 in the Financial Year to date

P = User's average half hourly metered demand in settlement period 35 for the period corresponding to D in the preceding Financial Year

Where National Grid determines its forecast before the relevant Financial Year and User settlement data for the Triad period is not available, National Grid shall apply the formula immediately above (within year forecast) but substitute the following definitions for the values T, D, and P:

T = User's HH demand at Triad in the Financial Year minus two

D = User's average half hourly metered demand in settlement period 35 in the Financial Year minus one, to date

P = User's average half hourly metered demand in settlement period 35 for the period corresponding to D in the Financial Year minus two

**Example** (where User settlement data is not yet available for the Triad period):

National Grid calculates a HH demand forecast on the above methodology at 10<sup>th</sup> March 04 for the period 1<sup>st</sup> April 2004 to 31<sup>st</sup> March 2005.

$$F = 10,000 * 13,200 / 12,000$$

$$F = 11,000 \text{ kWh}$$

where:

$$T = 10,000 \text{ kWh (period November 2002 to February 2003)}$$

$$D = 13,200 \text{ kWh (period 1<sup>st</sup> April 2003 to 15<sup>th</sup> February 2004<sup>\#</sup>)}$$

$$P = 12,000 \text{ kWh (period 1<sup>st</sup> April 2002 to 15<sup>th</sup> February 2003)}$$

<sup>\#</sup> Latest date for which settlement data is available.

ii) **Non Half Hourly (NHH) Metered Energy Consumption Forecast – Existing User**

$$F = E * D/P$$

where:

$$F = \text{Forecast of User's NHH metered energy consumption for the Financial Year}$$

$$E = \text{User's summed NHH energy consumption over the hours 16:00 to 19:00 for each day in the preceding Financial Year}$$

$$D = \text{User's summed NHH energy consumption for the hours 16:00 to 19:00 for each day for the Financial Year to date}$$

$$P = \text{User's summed NHH energy consumption for the hours 16:00 to 19:00 for each day for the period corresponding to D in the preceding Financial Year}$$

**Example:**

National Grid calculates a NHH energy consumption forecast on the above methodology at 10<sup>th</sup> June 2004 for the period 1<sup>st</sup> April 2004 to 31<sup>st</sup> March 2005.

$$F = 50,000,000 * 4,400,000 / 4,000,000$$

$$F = 55,000,000 \text{ kWh}$$

where:

$$E = 50,000,000 \text{ kWh (period 1<sup>st</sup> April 2003 to 31<sup>st</sup> March 2004)}$$

$$D = 4,400,000 \text{ kWh (period 1<sup>st</sup> April 2004 to 15<sup>th</sup> May 2004<sup>\#</sup>)}$$

$$P = 4,000,000 \text{ kWh (period 1<sup>st</sup> April 2003 to 15<sup>th</sup> May 2003)}$$

<sup>\#</sup> Latest date for which settlement data is available

Where forecasting before the relevant Financial Year concerned, National Grid would in the above example use values for E and P from Financial Year 2002/03 and D from Financial Year 2003/04.

iii) **Half Hourly (HH) Metered Demand Forecast – New User**

$$F = M * T/W$$

where:

F = Forecast of User's HH metered demand at Triad for the Financial Year

M = User's HH average weekday period 35 demand for the last complete month for which settlement data is available

T = Total system HH demand at Triad in the preceding Financial Year

W = Total system HH average weekday settlement period 35 metered demand for the corresponding period to M for the preceding year

**Example:**

National Grid calculates a HH demand forecast on the above methodology at 10<sup>th</sup> September 2004 for a new User registered from 10<sup>th</sup> June 2004 for the period 10<sup>th</sup> June 2004 to 31<sup>st</sup> March 2005.

$$F = 1,000 * 17,000,000 / 18,888,888$$

$$F = 900 \text{ kWh}$$

where:

M = 1,000 kWh (period 1st July 2004 to 31<sup>st</sup> July 2004)

T = 17,000,000 kWh (period November 2003 to February 2004)

W = 18,888,888 kWh (period 1<sup>st</sup> July 2003 to 31<sup>st</sup> July 2003)

iv) **Non Half Hourly (NHH) Metered Energy Consumption Forecast – New User**

$$F = J + (M * R/W)$$

where:

F = Forecast of User's NHH metered energy consumption for the Financial Year

J = Residual part month summed NHH metered energy consumption for the hours 16:00 to 19:00 for each day where new User registration takes place other than on the 1<sup>st</sup> of a month

- M = User's summed NHH metered energy consumption for the hours 16:00 to 19:00 for each day for the last complete month for which settlement data is available
- R = Total system summed NHH metered energy consumption for the hours 16:00 to 19:00 for each day for the period from the start of that defined under M but for the preceding year and until the end of that preceding Financial Year
- W = Total system summed NHH metered energy consumption for the hours 16:00 to 19:00 for each day for the period identified in M but for the preceding Financial Year

**Example:**

National Grid calculates a NHH energy consumption forecast on the above methodology at 10<sup>th</sup> September 2004 for a new User registered from 10<sup>th</sup> June 2004 for the period 10<sup>th</sup> June 2004 to 31<sup>st</sup> March 2005.

$$F = 500 + (1,000 * 20,000,000,000 / 2,000,000,000)$$

$$F = 10,500 \text{ kWh}$$

where:

$$J = 500 \text{ kWh (period 10<sup>th</sup> June 2004 to 30<sup>th</sup> June 2004)}$$

$$M = 1,000 \text{ kWh (period 1<sup>st</sup> July 2004 to 31<sup>st</sup> July 2004)}$$

$$R = 20,000,000,000 \text{ kWh (period 1<sup>st</sup> July 2003 to 31<sup>st</sup> March 2004)}$$

$$W = 2,000,000,000 \text{ kWh (period 1<sup>st</sup> July 2003 to 31<sup>st</sup> July 2003)}$$