

**Workgroup Report**  
**Demand Estimation Section H Changes to Processes and Responsibilities**  
**Modification Reference Number 0331**

Version 4.0

This Workgroup Report is presented for the UNC Modification Panel's consideration. The Distribution Workgroup considered that the modification is sufficiently developed and should now proceed to the Consultation Phase. A separate review of the legal text identified a small number of potential changes that should be considered for inclusion in the text to be issued within the Draft Modification Report.

## **1 The Modification Proposal**

Demand Estimation processes as outlined in section H of UNC have been essentially unchanged since code inception. The profiling and capacity estimation parameters and seasonal normal CWV derivations and use were set out at a time when all expertise for gas allocation resided within National Grid (Transco as was).

Over the past decade there have been a number of changes within the industry. Shipper organisations bear the impacts from the allocation mechanism and so have an interest in ensuring the process and parameters operate smoothly and are as accurate as possible.

Climate change has meant that Shippers are spending increased time and resources assessing impacts. Many organisations now have meteorologists and expert forecasters embedded within their organisation.

Over the past few years there have been comments in the annual Shipper representations on how ineffective the current consultation process is, many of which centre around identified faults in the profiles that are not corrected due to timing. In addition there appears to be a mismatch between code obligations – which rest with Transporters – and the fact that impacts are on Shipper organisations.

Review Group 280 has discussed changes to the current process to allow cross industry involvement in defining and undertaking the analysis of both general profiles and more involved climate work. This modification builds on the output from review group 280 to provide a basis for moving forwards.

### **The Proposal:**

To allow development of profiles and analysis supporting attribution on a cross industry basis. Removing responsibility from Transporters only to a more equitable basis would allow Users to contribute the expertise embedded within their organisations towards improving the entire process.

Currently analysis is constrained by the details within code. Removing these from being explicitly stated within code and restricting code to the output required would allow more flexibility to ensure analysis is appropriate. For the avoidance of doubt we are not looking to change the format of the attribution equation or the use of EUC bands to differentiate between groups of consumers but are intending the analysis to look at all LDZ and supply points equitably. This may include EUC boundaries

being amended as is currently allowed for within UNC. We believe this will impact UNC H1.1.4, H 1.6.8, H1.7.5 and H4.3.2

Under current governance arrangements we will be requesting UNCC amend the DESC terms of reference to support the extended activities. We will also be requesting UNCC create a new sub-committee or allow DESC to create a group of specialists to look at specific areas. The text of this modification assumes that an expert group will be created however under UNCC governance this will not be reflected within legal text. An expert group would be formed, reporting to UNCC through DESC that would provide a cross industry group responsible for the technical analysis and support for the work areas covered within section H. In doing this many of the technical details currently specified in explicit detail within UNC could be removed allowing the detailed analysis to be flexed as appropriate to ensure the profiles could represent the changing patterns of demand and provide more accurate allocation, while maintaining formal governance and escalation routes.

During the development group work terms of reference for the Expert Group and DESC have been developed that support the cross industry format of the work and these are detailed below. Elements of section H that E.ON believes would need amending are highlighted in the attached document and mentioned in the detail below.

The Transportation Principal Document Section H provides for the “Uniform Network Code Committee or any relevant Sub-committee” to consider a number of matters relating to demand estimation. The Uniform Network Code Committee has established the Demand Estimation Sub-Committee (DESC) meet as necessary to fulfil the functions set-out in Section H. On implementation of this Modification E.ON would request UNCC amend DESC terms of reference and create the expert group in line with requirements outlined here.

General Terms Section B 4.3.4 sets out the matters to be determined by a panel majority of the Uniform Network Code Committee:

- a) Membership and manner of appointment of members
- b) Basis of reporting to Uniform Network Code Committee, Users and Transporters
- c) Procedures for the conduct of business

Terms of Reference for DESC:

These three matters are implemented for DESC as follows.

#### **1. DESC Members and Appointment**

- a) DESC members are those nominated by shippers and one representative from each transporter listed below:
  - a) National Grid Gas NTS
  - b) National Grid Distribution

- c) Northern Gas Networks
  - d) Wales & West Utilities
  - e) Southern Gas Networks or Scotland Gas Networks
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- b) Each year, shippers nominate up to nine members. The Joint Office manages the process for nomination on shippers' behalf. Changes within year may be agreed by shipper members of the Uniform Network Code Committee.
  - c) Whilst each Transporter has the right to nominate members, xoserve has currently been appointed as an alternate to represent National Grid NTS and all DNs. xoserve is required to state, where appropriate, when it is speaking or acting on behalf of the Transporters in this capacity.
  - d) Attendance is open and xoserve, as the service provider, is invited to send one or more representatives for information purposes.
  - e) All meetings are chaired by the Joint Office, which also provides a secretary.

## 2. Basis for Reporting

**The Joint Office, on behalf of DESC, reports each month to the Uniform Network Code Committee, following the standard format used by the Uniform Network Code Work streams except that:**

- a) The Topic Status format is used to record progress on any specific issues that do not form part of the typical annual work plan (see Appendix).
- b) The Modification Status format is not used other than to highlight UNC Modification Proposals that might impact the work of DESC.
- c) DESC minutes shall include a summary of the decisions reached by DESC. In particular, using current code references:
  - i. Composite Weather Variable determination taking account of new weather experience (H1.4.2).
  - ii. Demand model smoothing to derive the seasonal normal values of the Composite Weather Variable (H1.5.2).
  - iii. Report and review of NDM Sampling (H1.6).
  - iv. Annual and any interim evaluation of End User Category definitions and Demand Model performance. (H1.8.1)
  - v. Proposed revision of End User Category definitions and Demand Models and discussion of User representations (H1.8.1 and H1.8.4).
  - vi. Matters arising from the source of weather data such as changes in weather stations.

- vii. Any other particular issue that may arise in the development or revision of End User Categories and Demand Models (H1.8.6).
- viii. Operation and delivery of output from the expert group including definition of the Terms Of Reference for the Expert Group.

Minutes of each meeting are made available to DESC Members, all shippers, members of the Uniform Network Code Committee and all other persons requesting copies.

### **3. Procedures for the Conduct of Business by DESC**

The Chairman's Guidelines apply to the conduct of the meeting.

In principle, meetings shall be open to all but the Chairman may exercise discretion to the extent permitted under the Chairman's Guidelines.

As allowed for under General Terms B1.4.7.3 which allows for voting where specified within Code we would envisage the legal text specifying voting arrangements for the UNCC relevant sub-committee (in this case DESC)

The quorum is at least four voting members or their alternates, of which at least two shall be shippers and two transporter.

Members are permitted to appoint alternates to attend on their behalf and a single alternate may represent more than one member.

Recommendations from the DESC will be reached by a simple majority of voting members present, or their alternate, ensuring equitable Transporter and Shipper votes. Maximum of 5 Shipper votes where 5 Transporters are present. Where a recommendation can not be reached as a result of a tied vote DESC will pass the matter to the UNCC to be resolved. For the avoidance of doubt a tied vote at the UNCC would represent a recommendation to not implement any proposed change.

### **4. Role of DESC**

The main role for DESC will be to review the outcomes and recommendations of the work conducted by the Expert Group, and to act as an escalation route for any disputes arising from the Expert Group. In particular DESC will:

- a) Review the Terms of Reference for the Expert Group and determine on any recommendations to change these Terms of Reference, subject to consultation with the Expert Group.
- b) Review the work and analysis being undertaken by the Expert Group with a view to ensuring that timetables are adhered to and a holistic approach is taken to the work being undertaken by the Expert Group.
- c) Raise any particular issues that they believe the Expert group should address and resolve.

- d) Recommend to Users and Transporters whether analysis should be commissioned from industry experts to assess climate change
- e) Determine whether the recommendations from the Expert Group are appropriate and ensure that the approach proposed by the Expert Group represents an economic and efficient solution to the issues being addressed. In instances when the DESC does not determine that the proposed approach is suitable to refer the proposal back to the Expert Group along with an explanation for the DESC's decisions and the areas that they need to be addressed.
- f) In instances when the Expert Group is unable to reach a recommendation DESC will seek to reach a recommendation based on the information that has been provided to it by the Expert Group. In instances when DESC are also unable to reach a recommendation as a result of a tied vote, they will either:
  - i. Refer the issue back to the Expert Group along with an explanation of the information and analysis that the Expert group needs to provide in order for the DESC to reach a recommendation; or
  - ii. Refer the issue to the UNCC along with a summary of the issue, the views expressed and the reason why they were unable to make a recommendation.

#### **Terms of Reference for the Expert group:**

#### **5. Expert Group Members and Appointment**

- a) Expert Group members are those nominated by shippers and one representative from each transporter listed below:
  - National Grid Gas NTS
  - National Grid Distribution
  - Northern Gas Networks
  - Wales & West Utilities
  - Southern Gas Networks or Scotland Gas Networks
- b) These experts will remain in place until they resign from the expert group, or their employing organisation informs the Joint Office that they are no longer their designated representative.
- c) Nominations to join the expert group will be issued by the Joint Office on an annual basis, with sufficient lead time to ensure that additional members are in place to start at the beginning of the Gas Year.
- d) Whilst each Transporter has the right nominate a member, xoserve has currently been appointed as an alternate to represent National Grid NTS and all DNs. xoserve is required to state, where appropriate, when it is speaking or acting on behalf of the Transporters in this capacity.
- e) Attendance is open and xoserve, as the service provider, is invited to send

one or more representatives for information purposes.

- f) All meetings are chaired by the Joint Office, which also provides a secretary.

## **6. Basis for Reporting**

**The Joint Office, on behalf of the Expert Group, reports to the DESC as appropriate, following the standard format used by the Uniform Network Code Work streams except that:**

The Topic Status format is used to record progress on any specific issues that do not form part of the typical annual work plan (see Appendix).

The Modification Status format is not used other than to highlight UNC Modification Proposals that might impact the work of the Expert group .

Expert Group minutes shall include a summary of the decisions reached by the Expert Group. In particular:

Minutes of each meeting are made available to Expert Group Members, all shippers, members of the Uniform Network Code Committee and all other persons requesting copies.

## **7. Procedures for the Conduct of Business by the Expert Group**

For formally scheduled meetings then the Chairman's Guidelines apply to the conduct of the meeting.

In principle, meetings shall be open to all but the Chairman may exercise discretion to the extent permitted under the Chairman's Guidelines.

The quorum is at least 3 members or their alternates, of which at least two shall be shippers and one transporter.

Members are permitted to appoint alternates to attend on their behalf and a single alternate may represent more than one member.

Recommendations from the Expert Group will be reached by a simple majority of members present, or their alternate. Where a recommendation can not be reached the Expert Group will pass the matter to DESC to be resolved, along with an explanation of the issue, the matters raised and any explanation as to why the Expert group have been unable to make a recommendation.

The expert group will be expected to convene at short notice to assess analysis and make recommendations on progress or alternative investigations. These meetings will by necessity be informal and may be conducted over email or teleconference. In these cases all representatives should be invited with a minimum of 2 being included in the discussions. A summary will be expected to be presented at the next formally scheduled meeting for the record.

## **8. Role of Expert Group**

The Expert group will be a sub-committee of the DESC. Its role will be to conduct, oversee and direct the detailed analysis and methodologies required for Demand Estimation purposes under the UNC and as such replaces Transporter responsibility within UNC H with responsibility resting with the appropriate UNCC designated sub-committee, in line with the guidance issued by DESC, and make recommendations on these methodologies which will be passed to the DESC for approval. In particular the Expert Group will be responsible for developing an underlying methodology for:

- a) undertaking any profile analysis
- b) determining the frequency with which profiles are updated
- c) agreeing sample sizes (Impacts code H1.6.1, H1.6.5, H1.6.6)
- d) agreeing sample composition (Impacts code H1.6.1, H1.6.5, H1.6.6, H1.6.7, H1.6.8, H1.7.1)
- e) defining the statistical techniques to be used (Impacts code H1.7.1, H1.7.3)
- f) defining any criteria for decision making through the analysis process (Impacts code H1.6.7)
- g) determining what position would be taken if change is not materially or statistically significant
- h) CWV reviews including determination of frequency (Impacts code UNC H1.4.1a,b, H1.4.2, H1.4.3)
- i) seasonal normal reviews including determination of frequency (Impacts code H1.5.2, H1.5.3, H1.5.4)
- j) ad-hoc analysis
- k) The expert group will oversee any decisions that arise during the analysis.
- l) The expert group will review any methodology and make any necessary changes on a regular basis, in particular emphasising the fact that demand models will not include any defined variables as a pre-requisite but will determine appropriate model composition during analysis. (Impacts code H1.3.1, H1.3.3, H1.4.1, H1.7.2, H1.7.3, H4.3.1)
- m) The expert group will be notified who is undertaking the analysis, on what frequency and agree access to data if necessary.
- n) The Expert Group should ensure that it is transparent who is undertaking the analysis and all data used in the process is available for Network Code signatories to replicate the analysis if required. (Impacts code H1.8.2)
- o) The expert group will ensure that members are available to consult on any data manipulation or exclusions that are required during analysis and decisions are made on the basis of agreed criteria
- p) The expert group will ensure analysis is published for consultation across the industry and questions responded to in sufficient time to meet system requirements (Impacts code H1.8.1, H 1.9.1, H1.9.2)
- q) In undertaking analysis using expertise across the industry it is not envisaged that the current representation and Ofgem appeal will be required. Any issues would be referred to DESC who could vote on outcomes. This removes some of the time constraints over the summer period allowing time to publish views to those not involved in the process while still meeting constraints of Transporter systems. (Impacts code

H1.8.3, H1.8.4, H1.8.5, H1.8.6)

It is intended that Section H will be revised to remove specific details of analysis or any minimum requirements for the Demand Models. Current analytical details will be fixed at those specified in the 2010/11 NDM Profile and Capacity Estimation Parameters supporting document and will determine the status quo that could be revised under recommendation of the expert group with evidence supporting any changes.

This list is not exhaustive but covers areas we believe should be amended. Our suggestions for removal/amendment are attached

**2 User Pays**

**a) Classification of the Proposal as User Pays or not and justification for classification**

Discussion in the review group suggested that any analysis over and above the standard levels of Transporter resource covered under current UNC provision would be raised as User Pays on an adhoc basis. The general provisions of UNC section H would not be User Pays.

**b) Identification of Users, proposed split of the recovery between Gas Transporters and Users for User Pays costs and justification**

All costs over and above standard levels of costs recovered 100% from NDM Shippers.

**c) Proposed charge(s) for application of Users Pays charges to Shippers**

p/peakdaykWh/day – i.e. the same method as recovering Distribution charges from Shippers.

**d) Proposed charge for inclusion in ACS – to be completed upon receipt of cost estimate from xoserve**

**3 Extent to which implementation of the proposed modification would better facilitate the relevant objectives**

**Standard Special Condition A11.1 (a): *the coordinated, efficient and economic operation of the pipe-line system to which this licence relates;***

Implementation would not be expected to better facilitate this relevant objective.

**Standard Special Condition A11.1 (b): *so far as is consistent with sub-paragraph***



***(a), the (i) the combined pipe-line system, and/ or (ii) the pipe-line system of one or more other relevant gas transporters;***

Implementation would not be expected to better facilitate this relevant objective.

***Standard Special Condition A11.1 (c): so far as is consistent with sub-paragraphs (a) and (b), the efficient discharge of the licensee's obligations under this licence;***

Implementation would not be expected to better facilitate this relevant objective.

***Standard Special Condition A11.1 (d): so far as is consistent with sub-paragraphs (a) to (c) the securing of effective competition: (i) between relevant shippers; (ii) between relevant suppliers; and/or (iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers;***

Allocation is used to share daily energy across Shipper portfolio. From a Transporter perspective the allocation methodology is designed to fully allocate all energy, and therefore Transporters income for each day is mostly complete with risk for incorrect allocation and subsequent movement sitting with Shippers. It is essential for Shipper organisations to minimise this risk as the differential between purchasing energy for final reconciled position against initial allocation can be significant given price movements. For example, reconciliation for 2009 to date has adjusted over 1TWh of the initial allocation for January 2009 from LSP to SSP markets. Given price changes between purchase could be large this is a high value risk. For example the differential between Sept 2008 purchase prices and Jan 2009 SAP used for reconciliation, only a 4 month difference, was up to 23pence per therm and this amounts to just under £8million on a 0.2% volume change for a single month. It can be seen from this that the risk to Shipper organisations can be significant.

The workgroup considered enabling better allocation would therefore facilitate the Transporter obligation to ensure effective competition as any risk in misallocation is also reflected in an increased reconciliation risk.

***Standard Special Condition A11.1 (e): so far as is consistent with sub-paragraphs (a) to (d), the provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards (within the meaning of paragraph 4 of standard condition 32A (Security of Supply – Domestic Customers) of the standard conditions of Gas Suppliers' licences) are satisfied as respects the availability of gas to their domestic customers;***

Implementation would not be expected to better facilitate this relevant objective.

***Standard Special Condition A11.1 (f): so far as is consistent with sub-paragraphs (a) to (e), the promotion of efficiency in the implementation and administration of the network code and/or the uniform network code.***

This proposal seeks to improve the processes outlined in section H and to streamline Network Code to enable more appropriate analysis. It was believed that this proposal achieves this objective by improving operation of this part of Code, by improving the verification of profiles, which may result in improvements to allocation between market sectors through a fair, transparent and non-discriminatory set of profiles, while removing the elements that have caused contention for the past few years and resulting in a number of modifications.

**4 The implications of implementing the Modification Proposal on security of supply, operation of the Total System and industry fragmentation**

No implications on security of supply, operation of the Total System or industry fragmentation have been identified. The workgroup did not identify any implications with demand estimation and Network 1-20 demand profiles differing given they are to be calculated separately.

**5 The implications for Transporters and each Transporter of implementing the Modification Proposal, including:**

**a) implications for operation of the System:**

No implications for operation of the system have been identified.

**b) development and capital cost and operating cost implications:**

Moves to operating an expert group with cross industry input into the analysis should be manageable within current budgets. Where analysis shows there would need to be system changes it is anticipated these being raised as a User Pays modification related to the specific changes being suggested.

**c) extent to which it is appropriate to recover the costs, and proposal for the most appropriate way to recover the costs:**

Additional operational costs recovered in line with the arrangements in Section 2.

There are no development or capital costs associated with the implementation of this proposal.

**d) Analysis of the consequences (if any) this proposal would have on price regulation:**

This modification should reduce the contractual risk for each Transporter by improving industry participation in the analysis of profiles and therefore removing the likelihood of requests for disapproval by shippers for the NDM capacity profiling and capacity estimation parameters proposals.

**6 The consequence of implementing the Modification Proposal on the level of contractual risk of each Transporter under the Code as modified by the**

## **Modification Proposal**

No such consequence is anticipated.

- 7 The high level indication of the areas of the UK Link System likely to be affected, together with the development implications and other implications for the UK Link Systems and related computer systems of each Transporter and Users**

No changes to systems would be required as a result of implementation of this Proposal.

- 8 The implications of implementing the Modification Proposal for Users, including administrative and operational costs and level of contractual risk**

*Administrative and operational implications (including impact upon manual processes and procedures)*

There will be a requirement from Users for input into an expert group. As the benefits from improvements to allocation are considerable, it is expected that there will be a net benefit to any immediate costs from resourcing the group.

*Development and capital cost and operating cost implications*

There will be ongoing operational costs from resourcing the expert group.

*Consequence for the level of contractual risk of Users*

The level of contractual risk for Users is expected to reduce under this modification. Improved allocation should provide more certainty for Shippers in levels of commodity charges and reconciliation. Less misallocation between temperature sensitive and less temperature sensitive EUC bands should also provide greater assurance of appropriate charging.

- 9 The implications of implementing the Modification Proposal for Terminal Operators, Consumers, Connected System Operators, Suppliers, producers and, any Non Code Party**

No implications identified.

- 10 Consequences on the legislative and regulatory obligations and contractual relationships of each Transporter and each User and Non Code Party of implementing the Modification Proposal**

This reduces the contractual risk of the Transporters as the obligation to develop Demand Estimation processes as covered in TPD Section H will move from Transporters to a cross industry group including Shippers.

**11 Analysis of any advantages or disadvantages of implementation of the Modification Proposal**

**Advantages**

- Addresses issues identified with the demand estimation process in the past, by increasing transparency and improving focus on areas of concern.
- Improves Shipper engagement and involvement in the analysis of profiles etc, therefore reducing the likelihood of methodologies being disallowed.
- Provides for improved use of climate experts from within Shipper organisations to aid the development of analysis.
- Enables the flexibility to provide a better default position should the proposals be rejected by UNCC.

**Disadvantages**

- The Expert Group, DESC and UNCC may not be able to reach an agreement on the change in the proposals, therefore the default position is there is no change to the current industry profiles which may lead to a less favourable position for all.
- Individual commercial incentives may affect industry decisions, therefore making it more difficult to reach an agreement by majority vote.

**12 Summary of representations received (to the extent that the import of those representations are not reflected elsewhere in the Workgroup Report)**

No written representations have been received.

**13 The extent to which the implementation is required to enable each Transporter to facilitate compliance with safety or other legislation**

No such requirement has been identified.

**14 The extent to which the implementation is required having regard to any proposed change in the methodology established under paragraph 5 of Condition A4 or the statement furnished by each Transporter under paragraph 1 of Condition 4 of the Transporter's Licence**

No such requirement has been identified.

**15 Programme for works required as a consequence of implementing the Modification Proposal**

No programme for works has been identified.

**16 Proposed implementation timetable (including timetable for any necessary**

**information systems changes)**

Implementation should be prior to analysis supporting a new gas year profiles. This would indicate implementation by 01 October 2011 to allow time for the expert group members to be identified prior to spring analysis.

**17 Implications of implementing this Modification Proposal upon existing Code Standards of Service**

No implications of implementing this Modification Proposal upon existing Code Standards of Service have been identified.

**18 Workgroup recommendation regarding this Modification Proposal**

The Distribution Workgroup considered that the modification is sufficiently developed and should now proceed to the Consultation Phase. A separate review of the legal text identified a small number of potential changes that should be considered for inclusion in the text to be issued within the Draft Modification Report.

**19 Transporter's Proposal**

This Modification Report contains the Transporter's proposal to modify the Code and the Transporter now seeks direction from the Gas and Electricity Markets Authority in accordance with this report.

**20 Text**

A specific meeting was arranged, at the Panel's request, to carry out a line by line review of the legal text. The conclusion was that the text generally implements the modification as proposed, although a small number of potential refinements were identified. These will be considered by the network responsible for providing the legal text, and a revised version is expected to be provided for inclusion in the Draft Modification Report. Minutes of the legal text review meeting are available at [www.gasgovernance.co.uk/0331/010711](http://www.gasgovernance.co.uk/0331/010711).

**UNIFORM NETWORK CODE – TRANSPORTATION PRINCIPAL DOCUMENT**

**SECTION H – DEMAND ESTIMATION AND DEMAND FORECASTING**

**1 DEMAND MODELS AND END USER CATEGORIES**

**1.1 Introduction**

1.1.1 Demand for gas at NDM Supply Point Components is required to be estimated (in accordance with this Section H) for purposes including determining Supply Point Capacity under Section B, establishing nominations under Section C and daily offtakes under Section E, and determining Annual Quantities under Section G1.6.

1.1.2 For the purposes of such demand estimation, each NDM Supply Point Component will belong to an End User Category for which a Demand Model will be established

in accordance with this paragraph 1.

1.1.3 In accordance with GT Section C2.6, references in this Section H to demand are:

- (a) at the level of any System Exit Point or End User Category, exclusive of shrinkage;
- (b) at the level of an LDZ, inclusive of LDZ shrinkage;
- (c) at the level of LDZ Aggregate NDM Points, exclusive of shrinkage.

~~1.1.4 In its application in respect of NDM Supply Point Components whose Annual Quantities exceed 2,196,000 kWh (75,000 therms), certain provisions of this Section H are modified as herein provided.~~

1.1.4 Not used.

1.1.5 For the purposes of the Code "**LDZ Aggregate NDM Points**" are in relation to an LDZ all the NDM Supply Point Components and all relevant Connected System Exit Points in the LDZ.

## 1.2 End User Categories

1.2.1 An "**End User Category**" is a category of NDM Supply Point Components in an LDZ defined by rules established in accordance with paragraph ~~1.7.1-6.9~~; and where appropriate a reference to an End User Category includes reference to the NDM Supply Point Components for the time being belonging to that category.

1.2.2 End User Categories will be defined:

- (a) by reference only to variables values of which:
  - (i) are maintained in the Supply Point Register; and/or
  - (ii) can be derived from Meter Readings obtained with the Meter Reading Frequency required (in relation to relevant Supply Meters) under Section M3

in respect of NDM Supply Point Components belonging to the relevant category; and

- (b) so that at any time every NDM Supply Point Component belongs to one and only one such category.

1.2.3 The "**Applicable End User Category**" in respect of an NDM Supply Point Component or NDM Supply Meter Point at any time is the End User Category to which the NDM Supply Point Component (or that in which that Supply Meter Point is comprised) belongs at that time.

1.2.4 The "**EUC Sample**" in relation to an End User Category is the Sampled NDM Supply Point Components (in accordance with paragraph 1.6.4) belonging to that category.

## 1.3 Demand Models

1.3.1 For the purposes of this Section H a "**Demand Model**" is a mathematical model which estimates, for an LDZ, an End User Category or LDZ Aggregate NDM Points, by reference to variables ~~(including weather and day of week) specified~~ determined by the ~~Transporters~~ relevant Sub-committee for the purposes of the model, daily demand at the System Exit Points in the LDZ or (as the case may be) the EUC

Sample or (as the case may be) LDZ Aggregate NDM Points.

- 1.3.2 The "**Applicable Demand Model**" in relation to an LDZ, an End User Category or LDZ Aggregate NDM Points is the Demand Model applicable in any Gas Year to such LDZ or End User Category or LDZ Aggregate NDM Points in accordance with this paragraph 1.
- 1.3.3 Notwithstanding GT Section C3.3.1, a Demand Model may estimate demand (for all relevant System Exit Points) on the basis of the flow weighted average calorific value referred to in GT Section C3.3.1(c)(iii).

#### 1.4 Composite Weather Variable

- 1.4.1 The elements of a Demand Model ~~will~~ may (but shall not be required to) include:
- (a) a single variable (the "**Composite Weather Variable**") derived from a formula ~~established~~ determined by the relevant Sub-committee ~~Transporters~~ and estimated to represent for the relevant LDZ the combined effect on demand of the components of weather ~~(including actual temperature, seasonal normal temperature and windchill, with relative weights assigned to each)~~ which affect demand; and
  - (b) a single coefficient ("**Weather Variable Coefficient**") in respect of the element of demand (in the relevant LDZ or End User Category) which varies with weather as represented by the Composite Weather Variable.
- 1.4.2 ~~Every 5 years, commencing 2000, the Transporters~~ At a frequency determined by the relevant Sub-committee ~~The relevant Sub-committee will, at appropriate frequencies determined by it, and will,~~ after consultation with the Uniform Network Code Committee or any other relevant Sub-committee, review and where appropriate revise (with effect from the start of a Gas Year) the formula by which the Composite Weather Variable for an LDZ will be determined ~~is determined on the basis of new weather experience; provided that the Transporters may (after such consultation) revise such formula at more frequent intervals where the Transporters determine it to be appropriate on the basis of unusual new weather experience in any shorter period.~~
- 1.4.3 ~~D~~ Daily values of the Composite Weather Variable for an LDZ, ~~will where the relevant Sub-committee determines such variables are r~~ required for the purposes of developing Demand Models, will ~~will~~ be ~~established~~ determined by the relevant Sub-committee ~~(by reference to the prevailing formula) on the basis of weather data relating to the relevant LDZ obtained by the Transporter in accordance with paragraph 5.2.~~

#### 1.5 Seasonal Normal Demand

- 1.5.1 For the purposes of this Section H seasonal normal demand ("SND") for an LDZ, an EUC Sample or LDZ Aggregate NDM Points for any Day will be determined in accordance with the Applicable Demand Model on the basis of the seasonal normal value of the Composite Weather Variable for the Day in respect of that LDZ.
- 1.5.2 The "seasonal normal value" of the Composite Weather Variable for an LDZ for a Day in any year will be determined by the relevant Sub-committee.
- ~~1.5.2 The "seasonal normal value" of the Composite Weather Variable for an LDZ for a Day in any year is the average of the values of the variable, smoothed as required, (derived from the formula prevailing in accordance with paragraph 1.4 for that year)~~

~~for that Day:~~

- ~~(a) in a significant number of consecutive previous years, derived from weather records maintained by the Transporters, the Meteorological Office or other reputable meteorological services provider, or~~
- ~~(b) in a significant number of consecutive previous years, derived from weather records maintained by the Transporters, the Meteorological Office or other reputable meteorological services provider, and from forecasts by the Meteorological Office or other reputable meteorological services provider; or~~
- ~~(c) derived from forecasts by the Meteorological Office or other reputable meteorological services provider.~~

1.5.3 Where the seasonal normal values of the Composite Weather Variable are revised, the ~~Transporters~~ the relevant Sub-committee will provide to Users the revised values ~~not later than 30th June in the Gas Year before the Gas Year in which such values first apply.~~

1.5.4 ~~At a frequency determined by the relevant Sub-committee Every 5 years, commencing 2010, t~~The relevant Sub-committee ~~Transporters~~ will, at appropriate frequencies determined by it, after consultation with the Uniform Network Code Committee or any other relevant Sub-committee, review and where appropriate revise (with effect from the start of a Gas Year) the seasonal normal value of the Composite Weather Variable for an LDZ ~~on the basis of new weather experience; provided that the Transporters may (after such consultation) revise such value at more frequent intervals where the Transporters determine it to be appropriate on the basis of unusual new weather experience in any shorter period.~~

## 1.6 NDM Sampling

1.6.1 For the purposes of development of End User Categories and Demand Models and where the relevant Sub-committee determines so the Transporter (other than National Grid NTS) will obtain data (which may, subject to paragraph 1.6.7, include estimates of missing data) as to daily offtakes of gas at the Supply Meter Points comprised in a sample of NDM Supply Point Components in each relevant LDZ.

1.6.2 For the purposes of paragraph 1.6.1:

- (a) the Transporter shall be entitled at its cost to:
  - (i) install, operate and read data recorders or Remote Meter Reading Equipment; and
  - (ii) procure Meter Readings from third parties,

In either case at NDM Supply Meter Points from time to time selected by the Transporter;

- (b) the Transporter will designate (as sampled for such purposes) NDM Supply Meter Points at which Remote Meter Reading Equipment is installed, at which it wishes to install Remote Meter Reading Equipment or at which it has, or intends to, procure Meter Readings for;
- (c) the sample will be selected by the Transporter by random sampling from NDM Supply Point Components having different Annual Quantities and



geographical locations.

- 1.6.3 For the purposes of paragraph 1.6.2:
- (a) a data recorder is a device which captures Meter Readings at the start of each Day, but is capable of being read only at the Supply Point Premises;
  - (b) the Transporter will not select any NDM Supply Meter Point for installing a data recorder or Remote Meter Reading Equipment without the consent of the consumer.
- 1.6.4 For each Gas Year an NDM Supply Point Component which is for the time being selected or designated under paragraph 1.6.2 is a **"Sampled"** NDM Supply Point Component.
- 1.6.5 The aggregate number of Sampled NDM Supply Point Components will be determined by a methodology developed by the relevant Sub-committee.:
- ~~(a) for all LDZs will be approximately 3,900 (of which approximately 1,200 will be subject to paragraph 1.6.2(b));~~
  - ~~(b) for a particular LDZ will be:~~
    - ~~(i) the approximate number of Sampled NDM Supply Point Components specified by the Transporters in a document published by the Transporters for the purposes of this paragraph 1.6; and~~
    - ~~(ii) comprised of NDM Supply Point Components located at points on the LDZ of a similar geographical location within the area in which the LDZ is located as was the case at 1 March 1996~~
- ~~or such other number as may be established pursuant to paragraph 1.6.6.~~
- 1.6.6 Not used. ~~The Transporters will consult from time to time with all Users and the Authority on whether to increase or reduce the number or materially alter the identity or location of the NDM Supply Point Components for all LDZs or a particular LDZ which are Sampled.~~
- 1.6.7 The data obtained by the Transporter in accordance with paragraph 1.6.1 will be subject to validation by the ~~Transporter~~ relevant Sub-committee ~~(by techniques which provide reasonable statistical assurance of the validity of each data set), and such of the data as is so validated will be the demand data in respect of Sampled NDM Supply Point Components for the purposes of paragraph 1.7.2.~~
- 1.6.8 Not Used.
- ~~1.6.8 Not Used. For NDM Supply Point Components whose Annual Quantity exceeds 2,196,000 kWh (75,000 therms) paragraph 1.6.7 will not apply and the data used for the development of Demand Models will be data (including estimates of missing data) obtained for each Gas Year from Supply Meter Points comprised in Supply Point Components from a sample randomly selected by the Transporter having different Annual Quantities in the relevant LDZ; the aggregate number of such Supply Point Components for all such LDZs will be approximately 1,600 and reference to the EUC Sample shall be construed accordingly.~~
- 1.6.9 The Registered User will co-operate with the Transporter:
- (a) in enabling access (where required) to Supply Meters for the purposes of establishing the NDM samples of NDM Supply Point Components and in

- ensuring that such samples are and will continue to fulfil the requirement to obtain the data as described in paragraphs 1.6.1 ~~and 1.6.8~~;
- (b) in obtaining the consent (where required) of any relevant person including the consumer for the installation, operation and reading of the data recorder or Remote Meter Reading Equipment at a NDM Supply Meter Point.
- 1.6.10 The Registered User of a NDM Supply Meter Point at which Remote Meter Reading Equipment specified in paragraph 1.6.2 is or is to be installed will, where requested to do so by the Transporter:
- (a) procure permission and access for the Transporter or the relevant third party to:
- (i) install and make operational Remote Meter Reading Equipment;
- (ii) attach the Remote Meter Reading Equipment to the Supply Meter Installation;
- (b) facilitate inspection and maintenance and any activity referred to in Sections M4.1.4(a) and (b), in relation to Remote Meter Reading Equipment, by the Transporter or the relevant third party as required for the purposes of keeping such equipment operational (including any requirement for resynchronisation and/or adjustment);
- (c) procure that a suitable site including support, protection and security for the Remote Meter Reading Equipment is available at the Supply Point Premises.
- 1.6.11 The Registered User of a NDM Supply Meter Point at which Remote Meter Reading Equipment specified in paragraph 1.6.1 is installed shall:
- (a) where it intends, or becomes aware that the consumer or any other person intends, to undertake works on the Supply Meter Installation (or any part of it) which will or is likely to impact on the ability of the Transporter to obtain accurate and timely Meter Readings, use reasonable endeavours to notify the Transporter at least two Business Days prior to the commencement of such works of the date when disconnection of the Remote Meter Reading Equipment from such Supply Meter Installation will occur and the date on which such works will be complete such that the Remote Meter Reading Equipment may or will be reconnected;
- (b) take reasonable steps to secure that the Remote Meter Reading Equipment is not damaged or otherwise mistreated.

## 1.7 Development of Demand Models and End User Categories

- 1.7.1 For each Gas Year, ~~after 31 March in the Preceding Year, the relevant Subcommittee~~ Transporters will develop or revise for each LDZ:-

- ~~(a) update the recorded data (maintained for the purposes of this paragraph from October 1994) by the relevant data in accordance with paragraph 1.7.2;~~
- ~~(b) select a set of such data with a view to achieving an appropriate balance between the objectives (so far as conflicting) of maximising the size of EUC Samples and the period to which such set of data relates;~~
- ~~(c) by statistical analysis (applied consistently as between End User Categories) of the selected data, develop or revise for each LDZ:-~~

- ~~(a)(i) — definitions of a number of End User Categories for the LDZ;~~
- ~~(b)(ii) — a Demand Model for each such End User Category;~~
- ~~(c)(iii) — a Demand Model for the LDZ; and~~
- ~~(d)(iv) — a Demand Model for LDZ Aggregate NDM Points~~

~~which (on the basis of such data and analysis) in the Transporters' reasonable judgment are most appropriate having regard to the objectives in paragraph 1.7.3.~~

1.7.2 Where the relevant Sub-committee has developed or revised for each LDZ the Demand Model and / or End User Categories the Transporter will complete the necessary undertakings to update the Demand Models and / or End User Categories in accordance with the revisions stipulated and determined by the relevant Sub-committee.

~~1.7.2 — The relevant data is:~~

- ~~(a) — the demand data for each Sampled NDM Supply Point Component referred to in paragraph 1.6;~~
  - ~~(b) — the demand data for LDZ Aggregate NDM Points (such demand data being the LDZ Daily Quantity Offtaken less the aggregate sum for quantities offtaken at all DM Supply Point Components and relevant Connected System Exit Points in the LDZ and adjusted by deducting LDZ shrinkage); and~~
  - ~~(c) — demand data and daily values of the Composite Weather Variable for each LDZ, for a 12 month period ending in March in the Preceding Year~~
- ~~and in respect of a Transporter relevant data is data in relation to a relevant System.~~

1.7.3 Not used.

~~1.7.3 — The objectives referred to in paragraph 1.7.1(c) are:~~

- ~~(a) — to define End User Categories so as to recognise significant differences in the annual profile of daily demand at different groups of NDM Supply Point Components; and~~
- ~~(b) — to maximise the goodness of fit (in statistical terms) of the Demand Model applicable to each End User Category to the relevant updated data referred to in paragraph 1.7.1(a).~~

1.7.4 The definition of an End User Category may be the same for all or several LDZs, and an EUC Sample may include the Supply Point Components in more than one LDZ.

1.7.5 ~~For NDM Supply Point Components whose Annual Quantities exceed 2,196,000 kWh (75,000 therms) the End User Categories (insofar as defined by reference to Annual Quantities) will be those applicable for the Gas Year commencing 1 October 1995 and will not be revised annually; and to that extent paragraphs 1.7.1(c)(i) and 1.7.3(a) shall not apply in respect thereof~~Not used.

## **1.8 Consultation on the relevant Sub-committee ~~Transporters'~~ proposals**

1.8.1 The relevant Sub-committee ~~Transporters~~ will, ~~in June of the Preceding Year,~~ consult with the Uniform Network Code Committee or any other relevant Sub-committee on proposed End User Category definitions and Demand Models

developed under paragraph ~~1.7.11-6.9~~, and ~~not later than 30 June in the Preceding Year~~ will submit to all Users.:

- (a) the proposed End User Category definitions and Demand Models developed under paragraph ~~1.7.11-6.9~~;
- (b) values of the Derived Factors (in accordance with paragraph 1.9.3), determined on the basis of such proposals;
- (c) any alternative End User Category definitions and Demand Models which the ~~Transporters relevant Sub-committee~~ (in undertaking the exercise under paragraph ~~1.7.11-6.9~~) considered to be not significantly inferior (~~on the basis of the objectives in paragraph 1.7.3 and such other criteria as the Transporters may reasonably consider to be appropriate~~) to those proposed; and
- (d) a summary of the ~~relevant Sub-committee's Transporters'~~ analysis of the performance in the Preceding Year ~~against the objectives in paragraph 1.7.3~~ of the End User Categories and Demand Models (applicable in the Preceding Year).

- 1.8.2 Upon the request (~~made not earlier than 1 May nor later than 31 May in the Preceding Year~~) of any User, the Transporters will ~~not later than 15 June in the Preceding Year~~ provide to that User (by electronic format chosen by the Transporters) the data ~~referred to in paragraph 1.7.2 (aggregated by EUC Sample in the case of the data referred to in paragraph 1.6.8), together with other data~~ used in the analysis referred to in paragraph 1.8.1(d), in a form which does not include the identity of Registered Users, Supply Point Premises, suppliers or consumers, nor details of the individual components of the Composite Weather Variable.
- 1.8.3 Users ~~and Transporters~~ may submit to ~~the arelevant Sub-committee Transporter~~ representations in respect of the proposed End User Categories and Demand Models, ~~up to but not later than 15 July in the Preceding Year.~~
- 1.8.4 ~~Between 16 July and 14 August in the Preceding Year, the~~ The relevant Sub-committee Transporters:
- (a) will review the representations made by Users ~~and Transporters~~ under paragraph 1.8.3;
  - (b) will consult, so far as they deem appropriate, with any User ~~or Transporter~~ in respect of representations made by them ~~or any other User~~;
  - (c) may convene meetings with any ~~User or~~ Users ~~or Transporters~~ for the purposes of such consultation.
- 1.8.5 The ~~relevant Sub-committee Transporters~~ will make available to Users ~~and Transporters~~ reasonable details of the representations made to them under paragraph 1.8.3 and consultations held under paragraph 1.8.4 (but may do so by oral presentation at a meeting of Users ~~and Transporters~~ convened under paragraph 1.8.4(c)); and shall be free to disclose to any User, ~~and Transporter~~ and the Authority any such representation and details of any such consultation.
- 1.8.6 The Transporters may at any time convene a meeting of the Uniform Network Code Committee or any relevant Sub-committee for the purposes of consulting on any particular issue which may arise in the development or revision under paragraph 1.7.1 of End User Categories and Demand Models.

## 1.9 Finalisation of End User Categories and Demand Models

~~1.9.1 Not later than 15 August in the Preceding Year, the Transporters will submit to the Authority and all Users their final proposals for End User Categories and Demand Models (and corresponding values of the Derived Factors) with such changes as the Transporters may on the basis of Users' representations and consultation under paragraph 1.8 determine appropriate.~~

1.9.1 Not later than 15 August in the Preceding Year, the Transporters will submit to the Authority and all Users their final proposals for End User Categories and Demand Models (and corresponding values of the Derived Factors) with such changes as the relevant Sub-committee determine may be appropriate based on Transporters' and Users' representations made under paragraph 1.8.

~~1.9.2 1.9.2 The End User Categories and Demand Models (and corresponding values of the Derived Factors) applicable to the Gas Year shall be those submitted by the Transporters under paragraph 1.9.1. Where under paragraph 1.7 the relevant Sub-committee is unable to or does not determine any changes to the Demand Models and / or the End User Categories, the Transporters shall use the End User Category Demand Models applying in the Preceding Year to create corresponding values of the Demand Factors and such End User Categories and Derived Factors shall then apply to the Gas Year. unless upon the application of the Transporters or any User, made not later than the 5th Business Day after the final proposals were submitted, the Authority shall within a further five Business Days after such date give Condition A11(18) Disapproval to the Transporters applying any particular such End User Category or Demand Model (and corresponding values), in which case the Transporters will use the End User Categories and End User Category Demand Models applying in the Preceding Year to create corresponding values of the Derived Factors and such End User Categories and Derived Factors shall then apply to the Gas Year.~~

1.9.3 For the purposes of this Section H the "Derived Factors" are:

- (a) for each Day of the Gas Year, the Annual Load Profile and Daily Adjustment Factor (in accordance with paragraph 2) for each End User Category; and
- (b) the EUC peak load factor for each End User Category and the peak load scaling factor (in accordance with paragraph 4).

## 1.10 DNO Users

1.10.1 In this Section H references to Users exclude DNO Users.

## 1.11 Relevant Sub-committee Voting Arrangements

1.11.1 Where the relevant Sub-committee referred to in this Section H is required to make a determination in relation to paragraphs 1.3.1, 1.4.1, 1.4.2, 1.4.3, 1.5.2, 1.5.4, 1.6.5, 1.7.2, 1.9.1 & 4.3.1, such determination shall be reached by means of a Panel Majority a vote conducted on a show of hands or such other affirmation or consent which may be appropriate. On any vote each Voting Member present shall be entitled to exercise one (1) vote.

1.11.2 For the purposes of this paragraph 1.11 a "Voting Member" is any Transporters' Representative and any Users' Representative.

1.11.3 The relevant Sub-committee referred to in this section shall comprise of:

- (a) up to five (5) Transporter Representatives being Voting Members;
- (b) up to five (5) User Representatives being Voting Members.

**2 DETERMINATION OF SUPPLY METER POINT DEMAND**

**2.1 Supply Meter Point Demand**

- 2.1.1 For the purposes of this Section H "**NDM Supply Meter Point Demand**" is the quantity of gas estimated or (as the case may be) deemed to be offtaken on a Day at an NDM Supply Meter Point.
- 2.1.2 Subject to paragraph 2.1.3 NDM Supply Meter Point Demand will be determined (in accordance with paragraph 2.2):
  - (a) before and (as appropriate) during the Gas Flow Day, for the purpose ("**Nomination Determination**") of establishing Output Nominations for NDM Supply Point Groups, in accordance with Section C;
  - (b) after the Gas Flow Day, for the purpose ("**Offtake Determination**") of establishing UDQOs for NDM Supply Point Components, in accordance with Section E.
- 2.1.3 For the purpose only of establishing an assumed metered volume to carry out individual NDM Reconciliation pursuant to Section E6.1.6, NDM Supply Meter Point Demand will be determined in accordance with paragraph 2.2.2.

**2.2 Supply Meter Point Demand Formula**

- 2.2.1 NDM Supply Meter Point Demand ('SPD') for a Day (Day 't') shall be determined according to the following formula:

$$SPD = \frac{AQ}{365} \times ALP_t \times (1 + DAF_t \times WCF_t) \times SF_t$$

where AQ is the Annual Quantity (in kWh) in respect of the relevant NDM Supply Meter Point (in accordance with paragraph 3.1.5(a) in the case of a Shared Supply Meter Point);

and where for Day 't':

- ALP<sub>t</sub> is the value of the Annual Load Profile for the Applicable End User Category;
- DAF<sub>t</sub> is the value of the Daily Adjustment Factor for the Applicable End User Category;
- WCF<sub>t</sub> is the Weather Correction Factor for the relevant LDZ in accordance with paragraph 2.5;
- SF<sub>t</sub> is the Scaling Factor for the relevant LDZ in accordance with paragraph 2.5.

- 2.2.2 For the purposes of paragraph 2.1.3 NDM Supply Meter Point Demand ('SPD') for a Day (Day 't') shall be determined according to the following formula:

$$SPD = \frac{AQ}{365} \times ALP_t$$

Where AQ is the Annual Quantity (in kWh) in respect of the relevant NDM Supply Meter Point (in accordance with Paragraph 3.1.5(a) in the case of a Shared Supply Meter Point);

and where for Day 't'

ALP<sub>t</sub> is the value of the Annual Load Profile for the Applicable End User Category.

### 2.3 Annual Load Profile

2.3.1 The "**Annual Load Profile**" for an End User Category for a Day is a factor representing the Seasonal Normal Demand of the End User Category for that Day as a proportion of the average Seasonal Normal Demand (for all Days of the Gas Year) of the End User Category.

2.3.2 The Annual Load Profile ('ALP<sub>t</sub>') for an End User Category for Day t shall be determined as:

$$ALP_t = \frac{SNDE_t}{\left( \frac{\sum_{t=1}^N SNDE_t}{N} \right)}$$

where:

SNDE<sub>t</sub> is seasonal normal demand for the End User Category for Day t

N is the number of Days in the Gas Year.

### 2.4 Daily Adjustment Factor

2.4.1 The "**Daily Adjustment Factor**" for an End User Category for a Day is a factor representing the weather sensitivity of demand in that End User Category on that Day relative to the weather sensitivity of demand in the LDZ on that Day.

2.4.2 The Daily Adjustment Factor ('DAF<sub>t</sub>') for an End User Category for a Day shall be determined as:

$$DAF_t = \frac{(WVCE_t / SNDE_t)}{(WVCN_t / SNDN_t)}$$

where for Day t:

WVCN<sub>t</sub> is the value of the Weather Variable Coefficient (in accordance with paragraph 1.4) in the Demand Model for the LDZ Aggregate NDM Points for the relevant LDZ;

$SNDN_t$  is the value of seasonal normal demand for LDZ Aggregate NDM Points for the relevant LDZ;

$WVCE_t$  is the value of the Weather Variable Coefficient in the Demand Model for the End User Category;

$SNDE_t$  is the value of seasonal normal demand for the End User Category.

## 2.5 Weather Correction Factor and Scaling Factor

2.5.1 For the purposes of paragraph 2.2 the "**Weather Correction Factor**" ( $WCF_t$ ) and "**Scaling Factor**" ( $SF_t$ ) in respect of an LDZ are (respectively) the factors determined as follows:

$$SF_t = ASD_t / NDMD_t$$

$$WCF_t = (ASD_t - \sum ((AQ_{EUC}/365)*ALP_t)_{LDZ}) / \sum ((AQ_{EUC}/365)*ALP_t)_{LDZ}$$

$ASD_t$  is:

- (a) for the purposes of Nomination Determination, Forecast LDZ Demand (at the relevant time of Nomination Determination) determined in accordance with paragraph 5.2 less the aggregate sum of DM Output Nominations (at the relevant time of Nomination Determination) at all DM Supply Point Components and relevant Connected System Exit Points in the LDZ and adjusted by deducting LDZ shrinkage;
- (b) for the purposes of Offtake Determination, that quantity comprised in the LDZ Daily Quantity Offtaken attributable to NDM Supply Point Components and relevant Connected System Exit Points (determined as the LDZ Daily Quantity Offtaken less the aggregate sum for quantities offtaken at all DM Supply Point Components and relevant Connected System Exit Points in the LDZ and adjusted by deducting LDZ shrinkage);

$SNDN_t$  has the meaning in paragraph 2.4.2; and

$NDMD_t$  is the aggregate for all NDM Supply Point Components and for any relevant Connected System Exit Point in the LDZ of the amounts determined by calculating Supply Point Demand for Day t in accordance with paragraph 2.2 with a Scaling Factor equal to one or (as the case may be) calculated in accordance with the relevant provisions of the CSEP Network Exit Provisions.

$AQ_{EUC}$  is the aggregate Annual Quantity for the Applicable End User Category as at 1<sup>st</sup> October, or as revised from time to time pursuant to paragraph 2.5.3.

2.5.2 In respect of each Gas Year, the Transporters will, on a specific date (the "**designated date**"), within:

- (a) the period of 3 calendar months ending on 31 December compare the aggregate NDM Annual Quantity for each LDZ ("**aggregate NDM LDZ AQ**") with the aggregate NDM LDZ AQ as at 1 October; and
- (b) the period of 3 calendar months ending on 31 March and 30 June compare the aggregate NDM LDZ AQ with the aggregate NDM LDZ AQ as at:
  - (i) the previous designated date at which the comparison resulted in a revision being made pursuant to paragraph 2.5.3(b); or



- (ii) where the comparison at the previous designated date does not result in a revision being made pursuant to paragraph 2.5.3(b), 1 October.
- 2.5.3 Where the comparison made in accordance with paragraph 2.5.2 determines that the aggregate NDM LDZ AQ has increased or decreased by an amount of more than 1%, the Transporters will:
- (a) on the first day of the month following the period in which such comparison was performed, publish the revised values that will apply in respect of  $\sum ((AQ_{EUC}/365)*ALP_i)$  for each LDZ;
  - (b) apply such revised values from the date referred to in paragraph (a).

### 3 NDM ANNUAL QUANTITIES

#### 3.1 Introduction

- 3.1.1 Subject to paragraphs 3.1.2 and 3.1.3, the Annual Quantity or the Provisional Annual Quantity of an NDM Supply Meter Point for each Gas Year shall be determined (on the basis of a standard 365 Day year) by seasonal normal adjustment of the metered quantity for a period ending before such Gas Year in accordance with this paragraph 3.
- 3.1.2 Subject to paragraph 3.4.4, in the circumstances in paragraph 3.2.4 the Annual Quantity or the Provisional Annual Quantity of the NDM Supply Meter Point for a Gas Year shall be that applicable for the Preceding Year.
- 3.1.3 For the Gas Year in which a New Supply Meter Point is established its Provisional Annual Quantity shall be the quantity specified by the relevant User in accordance with Section G7.3.6.
- 3.1.4 Upon annual determination thereof in accordance with this paragraph 3, the Annual Quantity of an NDM Supply Meter Point will be notified to the Registered User in accordance with Section G1.6.12.
- 3.1.5 In the case of a Shared Supply Meter Point which is an NDM Supply Meter Point:
  - (a) the Annual Quantity shall be established for the Supply Meter Point as a whole (disregarding the Shared Supply Meter Notification);
  - (b) thereafter a separate Annual Quantity shall be established (in accordance with Section G1.7.11) in respect of each Sharing Registered User.

#### 3.2 Relevant Metered Period

- 3.2.1 For the purposes of this paragraph 3.2 the "**Relevant Metered Period**" in respect of a Gas Year is the period from the Day after the starting Meter Read (in accordance with paragraph 3.2.3) to the ending Meter Read (in accordance with paragraph 3.2.2).
- 3.2.2 The ending Meter Read is the latest Valid Meter Read (in accordance with Section M3) before 10 August in the Preceding Year.
- 3.2.3 The starting Meter Read shall be:
  - (a) the latest Valid Meter Read before the target opening date, or if there was no such Meter Read less than three years before the target opening date;
  - (b) subject to paragraph 3.2.4, the first Valid Meter Read after the target opening

date.

Provided always that where the seasonal normal values of the Composite Weather Variable for an LDZ are revised in accordance with paragraph 1.5.3 the starting Meter Read shall be no earlier than four years prior to 1 October in the Gas Year that the revised seasonal normal values of the Composite Weather Variable are first used (the “**Longstop Date**”).

3.2.4 If there was no Valid Meter Read less than three years before the target opening date or more than 6 months before the ending Meter Read, or the first Valid Meter Read after the target opening date was earlier than the Longstop Date, paragraph 3.1.2 shall apply.

3.2.5 For the purposes of this paragraph 3.2 the "**target opening date**" is the date which is:

- (a) where the NDM Supply Point Meter is a Monthly Read Meter, 50 weeks; or
- (b) where the NDM Supply Point Meter is an Annual Read Meter, 42 weeks before the ending Meter Read.

### 3.3 Relevant Metered Quantity

The "**Relevant Metered Quantity**" is the Metered Quantity or (if there was one or more intervening Valid Meter Reads in the Relevant Metered Period) the sum of the Metered Quantities for the Relevant Metered Period (in accordance with Section M1.4.4(b)).

### 3.4 Annual Quantity

3.4.1 Subject to paragraph 3.4.3, the Annual Quantity ('AQ') for an NDM Supply Meter Point for a Gas Year shall be determined as follows:

$$AQ = RMQ \times \frac{365}{\sum_{t=1}^M (ALP_t \times (1 + DAF_t \times EWCF_t))}$$

where:

RMQ is the Relevant Metered Quantity;

M is the number of Days in the Relevant Metered Period;

and where for each Day (Day 't') in the Relevant Metered Period:

ALP<sub>t</sub> is the value for the year in which Day t falls (the "**relevant year**") of the Annual Load Profile for the Applicable End User Category;

DAF<sub>t</sub> is the value for the relevant year of the Daily Adjustment Factor for the Applicable End User Category;

EWCF<sub>t</sub> is the value for the relevant year of the Estimated Weather Correction Factor (in accordance with paragraph 3.4.2).

3.4.2 The "**Estimated Weather Correction Factor**" for a Day in respect of an LDZ is the factor determined by calculating the Weather Correction Factor (in accordance with

paragraph 2.5) for that Day substituting for the term 'ASD<sub>t</sub>' the value of demand for the LDZ Aggregate NDM Points determined from the Applicable Demand Model for the relevant year (on the basis of the value of the Composite Weather Variable).

- 3.4.3 Where a review has taken place pursuant to paragraphs 1.4.2 and 1.5.2 (for the purposes of this paragraph 3.4.3 and paragraph 3.4.4, the “**Review**”) the Annual Quantity for an NDM Supply Meter Point applicable from the start of the Gas Year in which the Review took effect will use revised Applicable Demand Models derived from the data used to calculate the Applicable Demand Models for the Gas Year immediately prior to the Gas Year that the Review took effect, together with the revised Composite Weather Variables and seasonal normal values, to calculate the values of ALPt, DAFt and EWCFt.
- 3.4.4 Notwithstanding paragraph 3.1.2, where a Review has taken place and the provisions of paragraph 3.4.3 apply, the Annual Quantity or the Provisional Annual Quantity of the NDM Supply Meter Point will be calculated as follows:

$$AQ = AQ_1 \times \frac{A}{B}$$

Where:

AQ1 = the Annual Quantity or the Provisional Annual Quantity of the NDM Supply Point applicable for the Preceding Year.

$$A = \sum_{i=1}^{365} SNDE_t$$

Where the values of SNDE<sub>t</sub> shall be derived using revised Applicable Demand Models derived from the data used to calculate the Applicable Demand Models for the Gas Year immediately prior to the Gas Year that the Review took effect, together with the revised Composite Weather Variables and seasonal normal values

$$B = \sum_{i=1}^{365} SNDE_t$$

Where the values of SNDE<sub>t</sub> shall be derived using the Applicable Demand Models for the Gas Year immediately prior to the Gas Year that the Review took effect.

## 4 NDM CAPACITY

### 4.1 Introduction

The Supply Point Capacity ('SPC') which a User is registered as holding at or (as the case may be) in respect of an NDM Supply Point Component on any Day in the Gas Year will be determined in accordance with the following formula:

$$SPC = AQ / PLF * 365$$

where:

AQ is the Annual Quantity of the NDM Supply Point Component for the Gas Year;

PLF is the EUC peak load factor in accordance with paragraph 4.2.

## 4.2 EUC peak load factor

The "EUC peak load factor" is a load factor for the Applicable End User Category determined as follows:

$$PLF = \frac{AAQ}{PDD - 365}$$

where:

AAQ is the sum of the Annual Quantities in respect of the NDM Supply Point Components in the EUC Sample; and

PDD is the 1-in-20 peak day demand of the Applicable End User Category determined under paragraph 4.3.

## 4.3 1-in-20 peak day demand

~~4.3.1 4.3.1 The relevant Sub-committee Transporter will determine 1-in-20 peak day demand in relation to Section H requirements only. by simulation using the relevant Demand Model and otherwise in accordance with the methodology referred to in GT Section C2.6.6.~~

~~4.3.2 For NDM Supply Point Components whose Annual Quantities exceed 2,196,000 kWh (75,000 therms) 1-in-20 peak day demand will be determined as aggregate NDM Supply Meter Point Demand (for all Supply Meter Points comprised in the NDM Supply Point Component) in accordance with paragraph 2 on the basis that: Not used.~~

~~(a) for the purposes of determining the values of 'ALP<sub>t</sub>', 'DAF<sub>t</sub>' and 'SNDN<sub>t</sub>', Day 't' is the Day of the highest seasonal normal demand under the Applicable Demand Model for the relevant LDZ Aggregate NDM Points;~~

~~(b) for the purpose of determining the value of 'WCF<sub>t</sub>' under paragraph 2.5, the value of 'ASD<sub>t</sub>' is 1-in-20 peak day demand for the relevant LDZ Aggregate NDM Points; and~~

~~(c) the value of 'SF<sub>t</sub>' is 1.~~

## 5 DAILY DEMAND FORECASTING

### 5.1 Weather forecasting

5.1.1 Transporters will obtain (from a reputable meteorological services provider) at certain times within each Day:

(a) forecasts of temperatures and wind speeds at a number of weather stations at intervals during the remainder of that Day and the following Day;

(b) details of the temperatures and wind speeds recorded at such weather stations at intervals during that Day and the preceding Day.

5.1.2 The times at which each Transporter will obtain weather data under paragraph 5.1.1 include the following approximate times: 11:30 hours, 15:15 hours and 23:30 hours on the Preceding Day and 07:30 hours, 11:30 hours and 15:15 hours on the Gas Flow Day.

### 5.2 LDZ Demand Forecasting

- 5.2.1 The Transporter will (during the Preceding Day and the Gas Flow Day in accordance with paragraph 5.2.3) forecast and notify to Users:
- (a) in the case of a DN Operator, demand in each relevant LDZ;
  - (b) in the case of National Grid NTS, demand for the Total System
- for the Gas Flow Day, using Short Term Demand Models, on the basis of the weather data most recently obtained in accordance with paragraph 5.1 (in the case of LDZ demand, for the weather station(s) located in or closest to the relevant LDZ).
- 5.2.2 A "**Short Term Demand Model**" is a mathematical model established by the Transporters on the basis of historic demand and other data, which estimates (at a given time) for an LDZ and the Total System and for any Day demand, by reference to data including:
- (a) forecasts of temperature and wind speeds for the Gas Flow Day or the remainder thereof;
  - (b) recorded temperature and wind speeds for the Preceding Day and (where relevant) the Gas Flow Day up to the time of forecasting; and
  - (c) actual demand (assessed by reference to gas flows at NTS/LDZ Offtakes adjusted for estimated changes in LDZ stock) for the Preceding Day and (where relevant) the Gas Flow Day up to the time of forecasting.
- 5.2.3 The Transporter will notify demand under paragraph 5.2.1 after receipt of weather data under paragraph 5.1.1 not later than the following times: 14:00, 18:00 hours, and 02:00 hours on the Preceding Day and 12:00 hours, 15:00 hours, 18:00 hours, 21:30 hours and 02:00 hours on the Gas Flow Day.
- 5.2.4 The Transporter may in addition and at its discretion notify demand (for a relevant System) at other times for any reason it considers appropriate including, but not limited to, where it appears to the Transporter that the prevailing Forecast LDZ Demand may be substantially inaccurate; and where it does so it will inform Users of the reasons for its view.
- 5.2.5 Where there is a delay in the provision of forecast and other information to the Transporter as described in paragraph 5.1, the Transporter may defer the time at which it notifies demand under paragraph 5.2.3 by a commensurate period.
- 5.2.6 For the purposes of the Code:
- (a) "**Forecast LDZ Demand**" means aggregate demand for the Gas Flow Day in an LDZ, forecast in accordance with this paragraph 5;
  - (b) "**Forecast Total System Demand**" means aggregate demand for the Gas Flow Day on the Total System, forecast in accordance with this paragraph 5;
  - (c) "**Demand Forecast Time**" means any time at which (in accordance with paragraph 5.2.3 or 5.2.4) the Transporter notifies Forecast LDZ Demand under paragraph 5.2.1.
- 5.2.7 In forecasting demand under this paragraph 5, the Transporter will act in good faith and will exercise reasonable skill and care, but the Transporter will not be liable (as to any loss or liability incurred by a User or otherwise) to any User in respect of or in consequence of anything done or omitted to be done by the Transporter under this

paragraph 5.

**6 CLASS A CONTINGENCIES**

**6.1 Class A Contingencies**

- 6.1.1 During the period of a Class A Contingency, notification of demand for the Gas Flow Day pursuant to paragraph 5.2.3 will be provided in accordance with the relevant Contingency Procedures.

For and on behalf of the Relevant Gas Transporters:

**Tim Davis**

**Chief Executive, Joint Office of Gas Transporters**