PROJECT NEXUS – SWEEP-UP MODIFICATION

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 Points 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 and allocations of Unidentified Gas 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 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.

1.1.4 In this Section H:

(a) the "**Committee**" is the Demand Estimation Sub-Committee established under paragraph 1.12.1;

(b) the "**NDM Demand Estimation Methodology**" is the document established and from time to time modified in accordance with paragraph 1.13.

1.1.5 In this Section H, unless otherwise expressly provided, references to Supply Meter Points and Supply Points (and classes thereof) include CSEP Supply Meter Points and CSEP Supply Points (and the corresponding classes thereof).

1.2 End User Categories

1.2.1 An "**End User Category**" is a category of NDM Supply Points in an LDZ defined by rules established in accordance with paragraph 1.2.2; and where appropriate a reference to an End User Category includes reference to the NDM Supply Points 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 of the relevant Class) under Section M5

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

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

1.2.3 The "**Applicable End User Category**" in respect of a Class 3 or 4 Supply Meter Point at any time is the End User Category to which the NDM Supply Point belongs at that time.

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

1.2.5 References in this Section H to the demand of an End User Category are to the demand of the NDM Supply Points in the EUC Sample.

1.2.6 A CSEP Supply Meter Point shall belong to the End User Category to which (pursuant to the provisions of IGTAD Section D2.1.1) the corresponding IGTS Supply Meter Point belongs.

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 or an End User Category, by reference to variables determined by the 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.

1.3.2 The "**Applicable Demand Model**" in relation to an LDZ or an End User Category is the Demand Model applicable in any Gas Year to such LDZ or End User Category in accordance with further provisions of 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 "**Composite Weather Variable**" for an LDZ and a Day is a single variable estimated to represent for the relevant LDZ the combined effect on demand for the Day of the components of weather which affect demand.

1.4.2 The Composite Weather Variable for an LDZ for a Day shall be derived from a formula determined (in accordance with this paragraph 1.4) by the Committee by reference to indicators of weather for which the CDSP has made arrangements as provided in paragraph 1.4.9.

1.4.3 The Committee will, at appropriate frequencies determined by it, 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.

1.4.4 A Demand Model may incorporate the Composite Weather Variable for the relevant LDZ.

1.4.5 Daily values of the Composite Weather Variable for an LDZ, required for the purposes of developing Demand Models, will be determined by reference to the prevailing applicable Composite Weather Variable formula by the Committee.

1.4.6 When using weather data to develop Demand Models or determine the formula for the Composite Weather Variable, the Committee shall determine, in its discretion, whether or not to use such weather data as adjusted (as provided in paragraphs 1.4.7 and 1.4.8) pursuant to the Weather Station Substitution Methodology (where applicable) or the Climate Change Methodology (and in paragraphs 1.4.7 and 1.4.8 references to weather data are to data so used by the Committee).

1.4.7 The CDSP shall:

(a) provide a copy of the Weather Station Substitution Methodology to any Party on request from that Party;

(b) adjust, in accordance with the Weather Station Substitution Methodology, the historical weather data at weather stations which have ceased operation and have been replaced by other weather stations; and

(c) provide such adjusted data to any Party on request.

1.4.8 The CDSP shall provide to any Party on request from that Party:

(a) a copy of the Climate Change Methodology; and

(b) the weather data at weather stations as adjusted in accordance with the Climate Change Methodology.

1.4.9 The CDSP shall make arrangements (which may but need not be the same as arrangements made for the purposes of paragraph 5.1.1), in accordance with the NDM Demand Estimation Methodology, to obtain:

(a) at intervals before and during each Day, forecast weather data;

(b) at intervals during and after each Day recorded weather data;

for the components of weather which are incorporated in the formula for determining the Composite Weather Variable for each LDZ.

1.5 Seasonal Normal Demand

1.5.1 For the purposes of this Section H seasonal normal demand ("**SND**") for an LDZ or an EUC Sample 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 Committee.

1.5.3 The Committee will, at appropriate frequencies determined by it, after consultation with the Uniform Network Code Committee, review and where appropriate revise (with effect from the start of a Gas Year) the seasonal normal value (for each Day in a year) of the Composite Weather Variable for an LDZ.

1.5.4 Where the seasonal normal values of the Composite Weather Variable for an LDZ are revised, the CDSP will provide the Parties with the revised values.

1.6 NDM Sampling

1.6.1 For the purposes of development of End User Categories and Demand Models, and where the Committee so determines, the Transporter (other than National Grid NTS) will obtain data (which may, subject to paragraph 1.6.6, include estimates of missing data) as to daily offtakes of gas at the Supply Meter Points comprised in a sample of NDM Supply Points 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 Class 3 or 4 Supply Meter Points from time to time selected by the Transporter;

(b) the Transporter will designate (as sampled for such purposes) Class 3 or 4 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 made, or intends to make, arrangements to procure Meter Readings from third parties;

(c) the sample will be selected by the Transporter by random sampling from candidate NDM Supply Points identified by the CDSP 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 Class 3 or 4 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 which is for the time being selected or designated under paragraph 1.6.2 is a "**Sampled**" NDM Supply Point.

1.6.5 The aggregate number of Sampled NDM Supply Points will be determined by a methodology developed by the Committee.

1.6.6 The data obtained by the Transporter in accordance with paragraph 1.6.1 will be subject to validation by the Committee.

1.6.7 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 Points and in ensuring that such samples are and will continue to fulfill the requirement to obtain the data as described in paragraphs 1.6.1;

(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 Class 3 or 4 Supply Meter Point.

1.6.8 The Registered User of a Class 3 or 4 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 M6.2.4(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.

1.6.9 The Registered User of a Class 3 or 4 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, the Committee will, in accordance with paragraphs 1.8 and 1.9, develop or revise for each LDZ:

(a) definitions of a number of End User Categories for the LDZ;

(b) a Demand Model for each such End User Category.

1.7.2 The CDSP will (in implementing this Section H) apply the Demand Models and/or End User Categories as developed or revised by the Committee and finalised in accordance with paragraph 1.9.

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

1.8 Consultation on the Committee proposals

1.8.1 The Committee will consult with the Uniform Network Code Committee on proposed End User Category definitions and Demand Models developed under paragraph 1.7, and will submit to the Parties:

(a) the proposed End User Category definitions and Demand Models developed under paragraph 1.7;

(b) values of the Derived Factors (in accordance with paragraph 1.10), determined on the basis of such proposals;

(c) any alternative End User Category definitions and Demand Models which the Committee (in undertaking the exercise under paragraph 1.7) considers to be not significantly inferior to those proposed; and

(d) a summary of the Committee's analysis of the performance in the Preceding Year of the End User Categories and Demand Models (applicable in the Preceding Year).

1.8.2 Upon the request of any Party, the CDSP will provide to that Party (by such electronic format as agreed by the Committee) the data used in the analysis 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 The Parties may submit to the Committee representations in respect of the proposed End User Categories and Demand Models.

1.8.4 The Committee:

(a) will review the representations made by the Parties under paragraph 1.8.3;

(b) will consult, so far as they deem appropriate, with any Party in respect of such representations made by them;

(c) may convene meetings with any Party for the purposes of such consultation.

1.8.5 The Committee will make available to the Parties reasonable details of the representations made to them under paragraph 1.8.3 and consultations held under paragraph 1.8.4(b) (but may do so by oral presentation at a meeting of the Parties convened under paragraph 1.8.4(c)); and shall be free to disclose to any User, Transporter and the Authority any such representation and details of any such consultation.

1.8.6 The Parties may at any time convene a meeting of the Uniform Network Code Committee for the purposes of consulting on any particular issue which may arise in the development or revision under paragraph 1.7 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 (and in sufficient time to meet CDSP system time constraints), the CDSP will submit to the Authority and all Parties the final proposals for End User Categories and Demand Models (and corresponding values of the Derived Factors) with such changes as the Committee determines are appropriate based on the Parties representations made under paragraph 1.8.

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 CDSP under paragraph 1.9.1.

1.9.3 Where under paragraph 1.7 the Committee is unable to or does not determine in accordance with paragraph 1.12.5 any changes to the Demand Models and/or the End User Categories for the next Gas Year, the CDSP shall use the End User Category and/or 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.

1.10 Derived Factors

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 (in accordance with paragraph 4).

1.11 DNO Users

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

1.12 Demand Estimation Sub-Committee

1.12.1 The Uniform Network Code Committee shall establish a Sub-Committee, which shall be known as the "**Demand Estimation Sub-Committee**", to carry out the functions provided in this Section H and elsewhere in the Code.

1.12.2 The Committee shall be composed of:

(a) up to five (5) Transporter Representatives being Voting Members;

(b) up to five (5) User Representatives being Voting Members.

1.12.3 Where the Committee referred to in this Section H is required to make a determination under any provision of the Code, unless expressly provided otherwise, such determination shall be reached by means of a simple majority by 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.

1.12.4 For the purposes of this paragraph 1.12 a "**Voting Member**" is any Transporters' Representative, any Users' Representative.

1.12.5 Where the Committee is unable (for whatever reason) to make a determination in accordance with paragraph 1.12.3 (an "**undetermined matter**"), then the Committee shall refer such undetermined matter to:

(a) any group (which is permitted to exist pursuant to the Committee's terms of reference as provided for under General Terms Section B General part 4.3.4) to obtain any additional information in order to allow a determination to be made (in accordance with paragraph 1.12.3); or

(b) the Uniform Network Code Committee, with a summary of why such determination was not able to be made by the Committee, which shall then make a determination.

1.12.6 The Committee shall continue to refer to any undetermined matter for determination in accordance with paragraph 1.12.5 until such time a determination is made.

1.13 NDM Demand Estimation Methodology

1.13.1 The NDM Demand Estimation Methodology is the methodology published by the Transporters following approval of the Committee setting out the matters in 1.13.3.

1.13.2 The NDM Demand Estimation Methodology is a UNC Related Document and a reference to the NDM Demand Estimation Methodology is to such document as from time to time in force.

1.13.3 The NDM Demand Estimation Methodology shall set out:

(a) the basis on which the values (for an End User Category, LDZ and Day) of Annual Load Profile and Daily Adjustment Factor are to be determined by reference to the applicable Demand Model;

(b) the basis on which the value (for a LDZ and Day) of the Weather Correction Factor is to be determined;

(c) the basis on which the peak load factor (for an End User Category, LDZ and Gas Year) is to be determined by reference to the applicable Demand Model;

(d) the types of weather data to be obtained (as provided in paragraph 1.4.9) by the CDSP; and

(e) the basis on which weather data estimated or recorded at different times of the Day is to be used in determining the value of the Composite Weather Variable.

1.13.4 For the purposes of Section V12.3 and V12.4, in relation to the NDM Demand Estimation Methodology, references to the Uniform Network Code Committee shall be construed as references to the Demand Estimation Sub-Committee.

1.14 Trader User

In this Section H references to Users exclude Trader Users.

1.15 CDSP Functions

1.15.1 Direct Functions of the CDSP to support implementation of this Section H are:

(a) obtaining weather data and making arrangements for the purposes of establishing the Composite Weather Variable and making available the methodologies and other information referred to in paragraph 1;

(b) supporting the development of, and applying, Demand Models and End User Categories; and

(c) calculating NDM Supply Meter Point Demand, the Annual Quantity for Class 3 and 4 Supply Meter Points and Supply Point Capacity for NDM Supply Points.

1.15.2 Agency Functions of the CDSP to support implementation of this Section H are obtaining data from candidate NDM Supply Points and undertaking sampling for the purposes of 1.6.

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 a Class 3 or 4 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 Points, in accordance with Section E.

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:

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

where AQ is the Annual Quantity (in kWh) in respect of the relevant Class 3 or 4 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_t is the value of the Annual Load Profile for the Applicable End User Category;

DAF_t is the value of the Daily Adjustment Factor for the Applicable End User Category;

WCF_t is the Weather Correction Factor for the relevant LDZ in accordance

with paragraph 2.5.

2.2.2 The operation of the formula in paragraph 2.2.1 shall be reviewed by the Committee every three (3) years.

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 for each Day and End User Category shall be determined in accordance with the NDM Demand Estimation Methodology.

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 sensitivity of demand in that End User Category on that Day to weather as represented by the Composite Weather Variable.

2.4.2 The Daily Adjustment Factor for each Day and End User Category shall be determined in accordance with the NDM Demand Estimation Methodology.

2.5 Weather Correction Factor

2.5.1 For the purposes of paragraph 2.2 the "**Weather Correction Factor**" ('WCF_t') for an LDZ and a Day is a factor representing the difference between the Daily Value of the Composite Weather Variable for that LDZ for that Day (in accordance with paragraph 2.5.2) and the seasonal normal value of the Composite Weather Variable for that LDZ for that Day.

2.5.2 The Weather Correction Factor for an LDZ and a Day shall be determined in accordance with the NDM Demand Estimation Methodology.

2.5.3 The Daily Value of the Composite Weather Variable for an LDZ for a Day shall be determined (in accordance with the NDM Demand Estimation Methodology) by the CDSP:

(a) for the purposes of Nomination Determination, by reference to forecast weather data (as referred to in paragraph 1.4.9(a));

(b) for the purposes of Offtake Determination, by reference to recorded weather data (as referred to in paragraph 1.4.9(b)).

2.6 Unidentified Gas

2.6.1 The "Unidentified Gas" (UIG) for a LDZ and a Day shall be determined as follows:

UIG = LDQO – AULOQ

where

LDQO is the LDZ Daily Quantity Offtaken

AULOQ is the aggregate for all Users of the User LDZ Offtake Quantities for the Day.

2.6.2 The "Forecast Unidentified Gas" (FUIG) at any time for an LDZ and a Day shall be determined as follows:

FUIG = AFLD – AULNQ

where

AFLD is Forecast LDZ Demand for the Day (in accordance with paragraph 5.2.7(a)) at that time, adjusted to exclude forecast LDZ shrinkage and forecast stock change;

AULNQ is the aggregate for all Users of the User LDZ Nomination Quantity for the Day at that time.

3 NDM ANNUAL QUANTITIES

3.1 Introduction

3.1.1 The Annual Quantity of a Class 3 or 4 Supply Meter Point shall be determined (on the basis of a standard 365 Day year) by seasonal normal adjustment of the metered quantity.

3.2 Annual Quantity

3.2.1 Subject to paragraph 3.2.2, the Annual Quantity ('AQ') for a Class 3 or 4 Supply Meter Point shall be determined as follows:

$$AQ = AQMQ \times \frac{365}{\sum_{t-1}^{M} \left(ALP_t \times \left(1 + (DAF_t \times WCF_t)\right) \right)}$$

where:

AQMQ is the AQ Metered Quantity;

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

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

ALP_t 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_t is the value for the relevant year of the Daily Adjustment Factor for the Applicable End User Category;

WCF_t is the value for of the Weather Correction Factor (in accordance with paragraph 2.5).

3.2.2 Where for any LDZ, with effect from the start of a Gas Year, either:

(a) the formula to determine the Composite Weather Variable is revised pursuant to paragraph 1.4.3 , or

(b) the seasonal normal value of the Composite Weather Variable for any Day is revised pursuant to paragraph 1.5.3,

the Annual Quantity for each Class 3 or 4 Supply Meter Point (except as provided in paragraph 3.2.3) shall be redetermined, on the basis of the updated values of the terms in the formula in paragraph 3.2.1 determined on the basis of the revision(s) referred to in paragraph (a) and (b); and such revised Annual Quantity shall apply with effect from the first Day of such Gas Year.

3.2.3 Paragraph 3.2.2 does not apply to a Supply Class 3 or 4 Supply Meter Point for which the last month of the Preceding Year was an AQ Calculation Month (because the revisions referred to in paragraph 3.2.2 will already have been taken into account in the determination in that AQ Calculation Month of the Annual Quantity).

4 NDM CAPACITY

4.1 Introduction

4.1.1 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 on any Day in a Formula Year will be determined in accordance with the following formula:

$$SPC = FYAQ / PLF * 365$$

where:

FYAQ is the Formula Year Annual Quantity of the NDM Supply Point for the Formula Year;

PLF is the EUC peak load factor for the Applicable End User Category in accordance with paragraph 4.2 for the Gas Year in which that Day falls.

4.1.2 If the Formula Year Annual Quantity of the NDM Supply Point for a Formula Year is amended under Section G1.6.18, the Supply Point Capacity shall be redetermined with effect from the effective date of such amendment.

4.2 EUC peak load factor

4.2.1 The "**EUC peak load factor**" for an End User Category is a load factor reflecting the average daily load (on a seasonal normal basis) of any Supply Meter Point in that End User Category as a proportion of the 1-in-20 peak day demand of such Supply Meter Point.

4.2.2 For each Gas Year, the EUC peak load factor, and (for the purposes of calculating it) 1-in-20 peak day demand and average daily load, for each End User Category, shall be determined by the Committee in accordance with the NDM Demand Estimation Methodology.

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 Subject to paragraph 5.2.6, 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: 12:00, 14:00, 18:00 hours, and 01:00 hours on the Preceding Day and 12:00 hours, 15:00 hours, 18:00 hours, 21:30 hours and 01:00 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 Where any of the data items referenced in the Short Term Demand Model is unavailable to National Grid NTS at the time that it notifies demand under paragraph 5.2.3, National Grid NTS shall utilise the best available data (as it reasonably considers) in substitution for such unavailable data items in forecasting demand for the Total System pursuant to paragraph 5.2.1.

5.2.7 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.

5.2.8 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.

5.3 NDMA Accuracy Report

5.3.1 National Grid NTS shall publish by no later than 1 January in each Gas Year a report containing a comparison between (i) the NDMA forecast for each Gas Flow Day during the preceding Gas Year as published at 14:00 hours on the relevant Preceding Day and 12:00 and 18:00 hours on the relevant Gas Flow Day in accordance with paragraph 5.2.3 and (ii) the aggregate UDQO for all NDM Supply Meter Points on the Total System in respect of each Gas Flow Day during the preceding Gas Year as published on the first information Day in accordance with Section E1.6.2(a) and on the Exit Close-Out Date in accordance with Section E1.6.3(b), together with a high level commentary in respect of the same.

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.