0432:

Project Nexus – Gas Demand Estimation, Allocation, Settlement and Reconciliation reform

This modification is one of a number of complementary proposals seeking to implement the requirements identified under Project Nexus. This modification identifies fundamental changes to the Gas Allocation, Settlement, Reconciliation, Demand Estimation, Annual Quantity, Invoicing and Supply Point Register elements of the UNC regime.

The Workgroup recommends that this modification should now proceed to consultation.

High Impact:
Users and Transporters

Contents

About this document:

This report will be presented by the Workgroup to the panel on 21 November 2013.

The panel will consider whether the modification is sufficiently developed to proceed to Consultation and to submit any further recommendations in respect of the definition and assessment of this modification.

Any questions?

Contact:
Joint Office

enquiries@gasgovernance.co.uk

0121 623 2115

Proposer:
Chris Warner

chris.warner@nationalgrid.com

07778 150668

Transporter:
National Grid Distribution

Xoserve:
Andy Miller

commercial.enquiries@xoserve.com

0121 623 2348

commercial.enquiries@xoserve.com

0432

Workgroup Report

28 October 2013

Version 0.5

1   Summary

Is this a Self-Governance Modification

The Modification Panel determined that self-governance procedures were not appropriate for this modification.

Why Change?

As part of the outcome of the last Gas Distribution price control review, it was agreed that funding should be available to support a major IT systems investment programme by the Transporters agent, Xoserve. This major systems investment for UK-Link Replacement provides an opportunity to consider whether the existing UNC requirements remain appropriate. Rather than asking Xoserve to procure replacement systems that deliver the existing functionality, there is an expectation that introducing regime enhancements at this stage would be the most economic time to implement any such change. This is particularly opportune since it is coincident with the development of smart metering, such that requirements can be specified that recognise changes to metering arrangements rather than any changes to accommodate smart metering being retrofitted in due course. The requirements gathering exercise for the enhancements is entitled Project Nexus. This modification is one of a number which reflects the requirements. Complementary Modification Proposals are anticipated to be raised shortly in the following areas:

- Retrospective adjustment
- iGT Single Service Provision
- Non functional
- Implementation (including non-business/non effective days)

Solution

The UNC Modification Panel established a Workgroup to support the development of potential UNC Modification Proposals that may be beneficial at the time of systems replacement. Building on responses to an Xoserve consultation exercise, the Project Nexus Workgroup has considered a range of potential changes, and the output from these considerations have been published as a suite of Business Requirement Documents (BRDs)[1]. The key proposals are:

1.   Settlement (Submission of Meter Readings and use in daily allocation)

- Users continue to be responsible for obtaining, validating and submitting Meter Readings (other than those pertaining to 'mandatory' Daily Metered (DM) Supply Points)
- The Gas Transporters (GT)' agent performs validations on the Meter Reading against data held on the Transporters' Supply Point Register
- Choice of four 'Products' for allocation and settlement
- Users would have access to a daily settlement service for all Supply Meter Points
- Introduction of an industry-wide 'smear' for Unidentified Gas and any other gas not accounted for through initial measurements or allocations

2.   Individual Meter Point Reconciliation

- Individual Meter Point Reconciliation for all Supply Meter Points

---

[1] http://www.gasgovernance.co.uk/nexus/brd

- Removal of Reconciliation by Difference (RbD) and replacement with an industry-wide scaling adjustment
- No change to reconciliation principles and calculations
- Introduction of the concept of read equipment 'resynchronisation' for Non-Daily Metered (NDM) Supply Meter Points where Meter Readings are derived using certain types of automated reading equipment

3. <u>Annual Quantity (AQ)</u>

- Monthly re-calculation of AQ
- If Meter Readings have previously passed validation against data held on the Supply Point Register they are deemed suitable for all processes, including AQ
- Removal of the amendment and appeals phases of the AQ review
- 2 measures of Daily Supply Point Capacity (SOQ) – one for Allocation and another 'fixed SOQ' which applies for 6 or 12 months for transportation charging purposes.
- Minimum duration of the reference period for AQ calculation is 9 months (compared to current 6 months + 1 day)

4. <u>Supply Point Register</u>

- GT monitoring of Users' compliance with the DM Check Read requirement
- Provision of 12 months' consumption data (where available in the GTs' systems) to any potential new User
- Improved management of priority and vulnerable customers
- Extension of the scope of the Supply Point Register

5. Demand Estimation

This Modification Proposal (0432) proposes a number of changes to Gas Settlement arrangements, including the removal of Reconciliation by Difference (RbD) and its replacement with a universal 'Allocation Scaling Adjustment'. This would require a new approach to gas allocation to reduce the likelihood of cross-subsidies arising at the point of allocation. The current NDM allocation algorithm (as defined in UNC TPD H2.2.1) would not be sustainable under Project Nexus arrangements. Consequently National Grid Distribution (NGD) raised UNC Modification Proposal 0453 'Project Nexus – Demand Estimation'[2] to address this matter.

A Technical Working Group (TWG) under the supervision the Demand Estimation Sub-Committee (DESC) identified and assessed a range of options for the future Non-Daily Metered (NDM) estimation algorithm. A preferred model was subsequently developed. This is an adaptation of the current NDM estimation algorithm. In particular the Scaling Factor (SF) would be removed from the algorithm and the Weather Correction Factor (WCF) would be amended to be based on the difference between actual and seasonal normal weather.

Noting that this work is complete it has been determined that UNC Modification Proposal 0453 is no longer required and consequently its contents have incorporated within this Modification Proposal. 0453 will be withdrawn shortly.

It is proposed that the UNC be modified to describe the NDM Demand Estimation process at a high level, but that the specific details and methodologies, including any

---

[2] <u>UNC Modification Proposal 0453 Project Nexus - Demand Estimation</u>

formulae, are set out in a UNC Related Document, which would require the approval of Uniform Network Code Committee (UNCC) for any subsequent amendments.

6.   Invoicing

- No wholesale change to current "thin invoice" and "thick supporting information" structure
- Requirement for all supporting information to be itemised at meter point level wherever possible
- All supporting information to be sent by electronic transfer
- Reduction in the number of 'Adhoc' invoices
- Alignment of charges to core transportation invoices

Relevant Objectives

Implementation of the changes identified within this modification would further relevant objective d) as it is expected to facilitate the securing of effective competition between Users as accurate cost allocations are a fundamental underpinning for effective competition and the changes are expected to lead to more accurate allocation of costs between Users.

It would also be expected to increase the predictability of cost allocations for individual Users. This would result from the use of more accurate and up to date consumption data, such that costs allocated to a given portfolio would more accurately reflect actual consumption that the User would expect to be aware of.

In addition to facilitating competition for existing Users, the reduction in risk and uncertainty would reduce barriers to entry for new market entrants.

Increased predictability and certainty of allocations would be expected to allow Users to purchase energy that more closely matches true requirements. This will reduce costs for Users and support the development of effective competition.

Implementation

01 October 2015 if an Authority decision is made by 30 June 2014

01 April 2016 if an Authority decision is made by 30 September 2014

With a backstop lead time of 18 months (549 calendar days) should the Authority makes its decision after 30 September 2014.

2   Why Change?

Background to Project Nexus

At the time of the current Gas Distribution Price Control Xoserve anticipated the need for a major IT systems investment programme. Stakeholder consultation was initiated, under the banner of 'Project Nexus' to inform the scope and nature of Xoserve's future services that IT systems would need to support – the detailed Business Requirement Documents that support this document form a key input to the design of that investment programme.

The initial phase of Project Nexus was a consultation exercise, in which interested parties were asked for their views on the long-term strategic requirements for Xoserve's services. The consultation also developed a preferred approach to further definition of stakeholder requirements.

Following the consultation phase of Project Nexus, an Initial Requirements Register (IRR) was compiled, identifying all the topics that respondents to the Consultation had raised.

Topics were grouped into three broad categories:

*   UNC changes
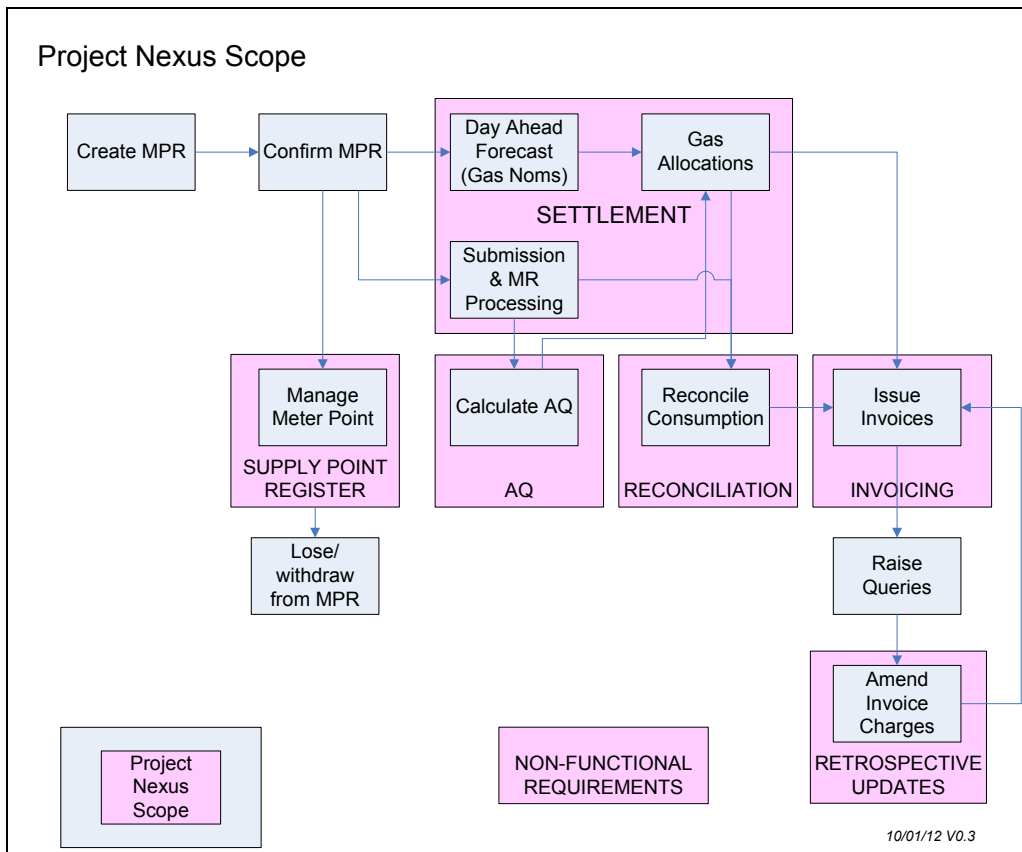*   Independent Gas Transporter (iGT) services
*   Data management

A UNC Workgroup was established to consider the UNC topics and develop requirements.

Development of Requirements

In 2009 the UNC Modification Panel agreed a Workstream (later renamed Workgroup) should be set up to define industry requirements for the development and enhancement of the UNC in areas that are relevant to Xoserve's services. The Initial Requirements Register (IRR) formed the basis of the discussions. Consultation responses were grouped into related topics and relevant as-is process models were reviewed and agreed. The Project Nexus Workgroup discussed the responses and reached a consensus on whether to carry forward or close the requirement. The outputs from the Workgroup Topic meetings were baselined Business Requirements Documents (BRDs) and to-be process models (i.e. future state processes).

Areas of Requirements Development

The following diagram shows the approximate relationship between seven topic areas:

Project Nexus Scope

10/01/12 V0.3

Overview of Business Requirements

The original comments in the IRR were grouped into a number of topics, loosely based on existing industry process areas. These topics were tackled in sequential order, to minimise the amount of re-work. The 8 topic areas covered under the UNC Project Nexus Workgroup were:

- Settlement (i.e. submission of Meter Readings and use in Daily Allocation)
- Annual Quantity
- Reconciliation
- Invoicing
- Supply Point Register
- Retrospective Updates
- Non-Functional requirements
- iGT Agency Services

Business requirements documents (BRDs) have been documented for each of these topics and have been reviewed by stakeholders.

The scope of this Modification is limited to the following BRDs:

- Settlement
- Annual Quantity
- Reconciliation
- Supply Point Register
- Invoicing

This Proposal also encompasses in its scope NDM Demand Estimation requirements which were developed in DESC. It will be noted that there is no BRD in respect of the solution subsequently identified by DESC members. DESC's findings were presented to Project Nexus Workgroup in a report to the 23rd April 2013 meeting [3].

3   Solution

The BRDs identify detailed business rules, which form the foundation for the necessary changes to the UNC. The following BRDs are relevant to this Modification Proposal:

Document Name	Version and Date	Current Location (29/06/12)
Business Requirements Document for Meter Read Submission and Processing and Settlement Arrangements ("**Settlement BRD**")	v1.0 02/11/2011	www.gasgovernance.co.uk/nexus/brd
Business Requirements Definition for Reconciliation ("**Reconciliation BRD**")	v1.0 24/11/2011	www.gasgovernance.co.uk/nexus/brd
Business Requirements Definition for Annual Quantity ("**AQ BRD**")	V2.0 30/03/2012	www.gasgovernance.co.uk/nexus/brd
Business Principles for Supply Point Register ("**Supply Point BRD**")	v1.0 16/01/2012	www.gasgovernance.co.uk/nexus/brd
Business Principles For Invoicing ("**Invoicing BRD**")	v1.0 13/01/2012	www.gasgovernance.co.uk/nexus/brd

The following information identifies the proposed regime for which Modification of the UNC is required.

Settlement (Submission of Meter Readings and Use in Daily Allocation)

Key Proposals

- Users would continue to be responsible for obtaining, validating and submitting Meter Readings
- Gas Transporters would perform validations on the Meter Reading against data held on the Supply Point Register
- A choice of four future 'Products' for allocation of daily gas off-taken
- Users would have access to a daily settlement service for all Supply Meter Points
- Introduction of an industry-wide "smear" for Unidentified Gas and any other gas not accounted for through initial measurements or allocations

Overview of the 4 Products

It is proposed to introduce 4 'Products' which would be available to all Supply Meter Points (with the exception of DM 'mandatory' Supply Meter Points).

Each product is described below.

Product 1 – Time Critical DM (Settlement BRD Section 5.5)

---

[3] Project Nexus NDM Estimation - DESC Recommendations

This would be a mandatory service for Supply Meter Points subject to the Daily Read Requirement.

Meter Readings are procured by the Transporter and must be submitted by 11am on Gas Flow Day (GFD)+1. Where no Meter Readings are received, the Transporter would calculate an estimated Meter Reading based on the recorded consumption from 7 days earlier (a "D-7" estimate). Estimated Meter Readings can be replaced up to D+5, at which point the latest accepted Meter Reading will be used for Energy Balancing and Commodity billing purposes.

Product 2 – Non-Time Critical DM (Settlement BRD Section 5.6)

This would be an elective service available to any Supply Meter Point with an AQ below 58.6m kWh.

Users may elect to use this service for any Supply Meter Point other that one subject to the Daily Read Requirement.

Meter Readings must be submitted within 24 hours of the end of the Gas Day i.e. by 05:59 the following morning. The Transporter will use a "D-7" estimate in any allocation runs, until an actual Meter Reading is received.

Where no Meter Readings are received by D+5, the D-7 estimate will prevail. Estimated Meter Readings can be replaced up to D+5, at which point the latest accepted Meter Reading will be used for Energy Balancing and Commodity billing purposes.

Product 3 – Batched Daily Readings (Settlement BRD Section 5.7)

This would be a voluntary service available to any Supply Meter Point with an AQ below 58.6m kWh.

The Supply Meter Point would be subject to NDM allocation each day based on its AQ and an allocation algorithm. The need for change to the allocation algorithm is considered below. Gas usage is subsequently reconciled for each day's individual consumption, by the User submitting a batch of daily readings. The proposed read frequencies for batch submission are weekly, fortnightly and monthly.

Product 4 – Periodic Readings (Settlement BRD Section 5.8)

This would be a voluntary service available to any Supply Meter Point with an AQ below 58.6m kWh.

The Supply Meter Point would be subject to NDM allocation each day based on its AQ and an allocation algorithm. Gas usage would be subsequently reconciled when the User submits a periodic Meter Reading, which must be a Valid Meter Reading. The reconciliation quantities and values are derived using the original allocation profile.

Key features of the four Products (Summary of Settlement BRD Sections 5.5 – 5.8)

Process Description	Basis of energy Allocation	Basis of Energy Balancing	Shipper Read Submission	Missing read arrangements for energy allocation
Product 1: Daily Metered Time Critical Readings	Daily Read	Daily Read	Daily by 11 am on GFD+1	D-7 estimate
Product 2: Daily Metered not Time Critical Readings	Daily Read	Daily Read	Daily by end of GFD+1	D-7 estimate
Product 3: Batched Daily Readings	Allocation Profiles	Allocation Profiles	Periodically in batches of daily readings	Not applicable – not used in allocation
Product 4: Periodic Readings	Allocation Profiles	Allocation Profiles	Periodically	Not applicable – not used in allocation

Mapping of the future Products to current services

The four proposed products can be mapped approximately to the existing services as shown below.

Current services	Future "product"	
DM Mandatory	Product 1 – Time Critical DM	DM
DM Voluntary/ DM Elective	Product 2 – Non-Time Critical DM	
Non-Daily Metered	Product 3 – Batched Daily Readings	NDM
	Product 4 – Periodic Readings	

Treatment of 'Unidentified Gas' (Settlement BRD Section 5.4)

An initial estimate of unidentified gas will be calculated each day as part of the daily gas nomination and allocation process.

Step 1

Daily Meter Readings are received from Products 1 and 2. (Note: for Product 2, D-7 estimates are used until an actual Meter Reading is received; or where there is no Meter Reading for Product 1).

Step 2

The NDM algorithm calculates an initial allocation for all Product 3 and 4 Supply Meter Points. This will require an improved estimation methodology. This will still be based on AQ, but will be more responsive to other factors, such as weather. Work on reviewing NDM algorithms has been completed within the Demand Estimation Sub-Committee (DESC). The agreed approach to NDM Demand Estimation has been included within this Proposal.

Step 3

Total LDZ Throughput less Shrinkage, less Step 1 and Step 2 = Unidentified Gas for the LDZ.

Step 4

Unidentified gas in each LDZ is shared out to all portfolio Users in the LDZ based on their total Step 1 and Step 2 gas nominations and measurements for the day. The charge would be at portfolio level by User by LDZ, not at Supply Meter Point level.

Unidentified Gas would be amended subsequently and re-shared as Individual Meter Point Reconciliations occur. See Reconciliation section below.

Submission of Meter Readings (Settlement BRD Section 8)

Limited change is envisaged to the Meter Reading submission arrangements. Submission of Meter Readings would remain the responsibility of the User.

Meter Reading Validation (Settlement BRD Sections 5.13, 5.14)

Users would continue to have responsibility for validating Meter Readings prior to submission to the Transporter. The proposals include a new two-step validation process. Users would validate Meter Readings using the current AQ/SOQ for the Supply Meter Point:

- For DM Supply Meter Points (Products 1 to 3), by comparing the energy that the Meter Reading would generate to the SOQ for the Supply Meter Point
- For periodically read Supply Meter Points (Product 4), by comparing the energy that the Meter Reading would generate to the AQ for the Supply Meter Point, applied pro-rata for the number of days in the read period

If the proposed energy passes the first test, it can be loaded to the Transporters system and used in all subsequent processes.

The Transporter would replicate the User validations and in certain circumstances would reject Meter Readings if they fail the tests. This enhanced validation is essential to support the changes to downstream AQ calculation and reconciliation processes, which rely on these Meter Readings.

If the energy fails the first test but passes the second test, it can only be loaded if it has been submitted with an 'override' flag. By using this flag the User would confirm that they have checked the Meter Reading (and the energy generated) and acknowledges that the energy is unusually large or small, but confirms that it is correct. The 'flag' could be populated at first attempt at submission, or at a subsequent re-submission following a rejection by the Transporter.
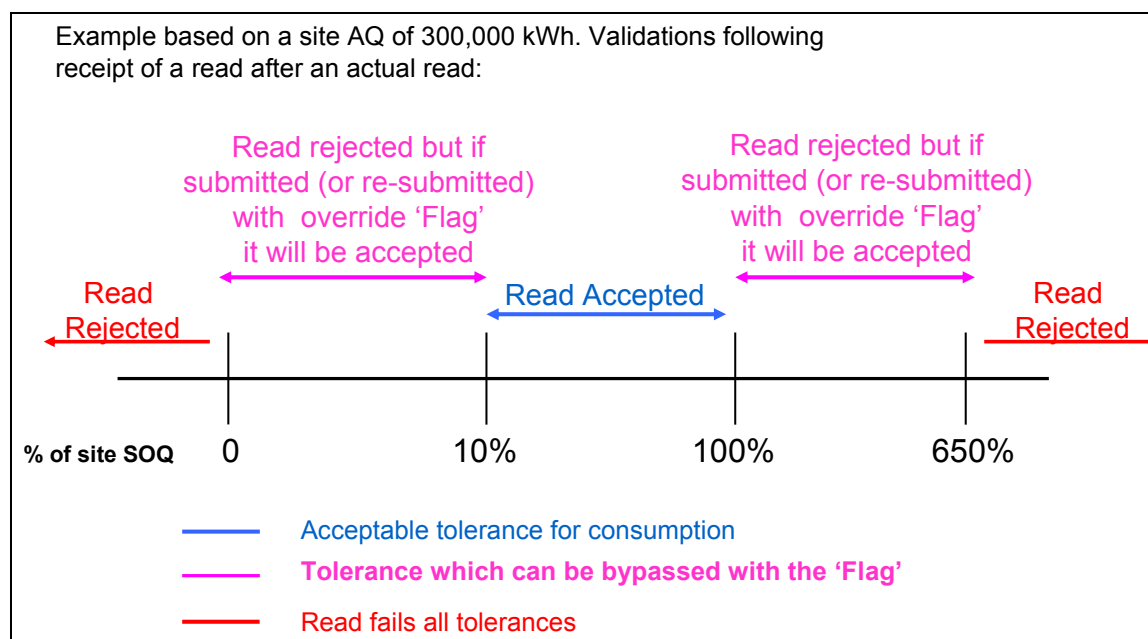
Reads where the energy fails the second test cannot be loaded. This second test is sometimes referred to as the 'market breaker' test. Transactions outside of this test would risk 'breaking' the market, and so cannot be allowed to load.

As a safeguard, if the 'override flag' is set for a Meter Reading which according to the Transporters calculation would pass both tests, the Meter Reading would be rejected. This is to protect all downstream processes from erroneous use of the flag, e.g. trying to 'force' Meter Readings through without performing full validation.

Read validation tolerances

The interaction of the two tests is shown below.

The working values of the tests can be found in the detailed Settlement BRD. It is intended that the actual values will be determined through further analysis at a later stage, and that there should be sufficient flexibility to amend the values after implementation if the industry agrees changes.

Example based on a site AQ of 300,000 kWh. Validations following receipt of a read after an actual read:

Read rejected but if submitted (or re-submitted) with override 'Flag' it will be accepted

Read rejected but if submitted (or re-submitted) with override 'Flag' it will be accepted

Read Rejected

Read Accepted

Read Rejected

% of site SOQ   0   10%   100%   650%

——— Acceptable tolerance for consumption

——— Tolerance which can be bypassed with the 'Flag'

——— Read fails all tolerances

Interaction with Smart Metering Programme/Data Comms Co (DCC) arrangements

None of the proposals for Meter Reading submission are directly dependent on roll-out of smart meters or introduction of DCC, although it is expected that use of Products 1-3 would necessitate use of automated Meter Reading facilities.

Product 4 is likely to be the 'default' service for a current NDM Supply Meter Point.

Day Ahead Gas Nomination Processes (Settlement BRD 5.1)

One of the Workgroup's objectives was to maintain or improve the alignment of 'day ahead' NDM Gas Nominations with NDM Allocations (after the Gas Day). The proposal is to mirror the new NDM Allocation arrangements and to remain fairly close to the current principles for Day Ahead Gas Nominations:

- For the future equivalent of DM Supply Meter Points (Products 1 and 2), the User would nominate the next day's gas consumption
- Where the User does not submit a gas nomination for Product 1 or 2 Supply Meter Points (either for the interim or final runs of the nomination process) the Transporter would use a D-7 estimate (based on recorded consumption from 7 days earlier). A zero value would be used for scheduling purposes
- For the future equivalent of NDM Supply Meter Points (Products 3 and 4), by estimating the next day's gas consumption, in a consistent manner to the 'after the day' allocations
- Within each LDZ, the sum of DM nominations plus the sum of the NDM estimates is deducted from the LDZ forecast consumption (as predicted by the Gas Control Room – unchanged from current arrangements)
- The difference between total LDZ forecast and the sum of all the Supply Meter Point level forecasts is equal to forecast Unidentified Gas, and would be shared out to all portfolio Users in the LDZ based on their total forecast measurements for the day. The charge would be at portfolio level by User by LDZ, not at Supply Meter Point level

Access to Settlement Products (Settlement BRD 5.11)

Except as detailed in above (Product 1), any Supply Meter Point can access any of the 3 Products (Product 2, 3 & 4). Users would be required to designate a Product in advance for a Supply Meter Point, and give future notice (providing a minimum of 5 days' notice) of a change of Product.

Reconciliation

Key Proposals

- Individual Meter Point Reconciliation for all Supply Meter Points
- Removal of RbD and replacement with an industry-wide scaling adjustment
- No change to reconciliation principles and calculations
- Introduction of the concept of Resynchronisation for NDM Supply Meter Points where Meter Readings are derived using certain types of automated reading equipment

Reconciliation services by Settlement Product (Reconciliation BRD 8.3, 8.4)

The four Settlement Products would be subject to Individual Meter Point Reconciliation as follows:

Process Description	Basis of initial Allocation	Basis of Energy Balancing	Shipper Read Submission	Reconciliation
Product 1: Daily Metered Time Critical Readings	Daily Read	Daily Read	Daily by 11 am on GFD+1	Meter Point level following a re-synch or estimate
Product 2: Daily Metered not Time Critical Readings	Daily Read	Daily Read	Daily by end of GFD+1	Meter Point level following a re-synch or estimate
Product 3: Batched Daily Readings	Allocation Profiles	Allocation Profiles	Daily Reads in Batches	Daily Reconciliation at Meter Point level on receipt of a batch of reads
Product 4: Periodic Readings	Allocation Profiles	Allocation Profiles	Periodically	Meter Point level at receipt of read

Reconciliation would still be based on a reconciliation energy amount (kWh) and would consist of Energy at System Average Price (SAP) and Transportation Commodity costs at the applicable rates.

The three key reconciliation scenarios which exist in the current regime would continue to exist:

- DM Reconciliation on receipt of an actual Meter Reading following a series of estimated Meter Readings
- Resynchronisation reconciliation on receipt of a resynchronisation Meter Reading, back to the previous resynchronisation read

- NDM reconciliation, where periodic Meter Readings are received and reconciliation energy is attributed to the days since the last reading based on the allocation profile

In addition, Product 3 would introduce the concept of daily reconciliation when a batch of Daily Meter Readings is received. The resulting reconciliations would be a series of one-day NDM reconciliations.

Individual Meter Point Reconciliation would apply to all Supply Meter Points and would be triggered by the submission of a Meter Reading.

Reconciliation Safeguards (Settlement BRD 5.15 – 5.18)

There will be a number of safeguards to ensure that Individual Meter Point reconciliation takes place in a timely manner. These safeguards all exist in the current regime, but the rules have been reviewed as part of this Proposal. The safeguards include:

- Rules on which Products or Meter Reading frequencies can be adopted, based on Supply Meter Point AQ
- Performance standards for Meter Reading submission (i.e. requirement to submit Meter Readings for a certain proportion of the portfolio each day/month/year
- Where the Meter Readings are derived by automated Meter Reading equipment such as a datalogger, a requirement to obtain a check reading to a specified frequency. Note that Meter Reading equipment which captures and transmits the actual index of the meter, rather than relying on meter pulses or similar technology, would not require a check read.
- A 'must read' requirement if Meter Readings are not submitted for a standard interval, whereby the Transporter would obtain a single Meter Reading and use it to trigger a reconciliation

The proposed trigger levels are set out below:

Process Description	Qualification criteria	Performance standard	Must Read Requirement	Check Read Requirement (where applicable)
Product 1: Daily Metered Time Critical Readings	Mandatory for all meter points with AQ >58.6m kWh	97.5% of required reads submitted each day	N/A	Every 12 months
Product 2: Daily Metered not Time Critical Readings	Any meter point	97.5% of required reads submitted each day	4 months since last reading	Every 12 months

Process Description	Qualification criteria	Performance standard	Must Read Requirement	Check Read Requirement (where applicable)
Product 3: Batched Daily Readings	Any meter point	Reads submitted for 90% of meter points each month	4 months since last reading	Every 12 months
Product 4: Periodic Readings – Monthly Read	Product 4 meter points with AQ >293,000	Reads submitted for 90% of meter points each year	4 months since last reading	Every 12 months
Product 4: Periodic Readings – Annually Read	Product 4 meter points with an AQ <293,000	Reads submitted for 70% of meter points each year	24 months since last reading	Every 24 months

Impact of Reconciliation on Unidentified Energy (Reconciliation BRD 8.8)

Each reconciliation, re-reconciliation and resynchronisation changes the measurement at an individual Supply Meter Point, and therefore changes the amount of unidentified energy for the reconciliation period in the LDZ.

All Individual Meter Point reconciliations (of all three types listed above) would trigger an equal and opposite amendment to Unidentified Gas. This would result in debits or credits to all Users in the relevant LDZ in line with their measurements for the day. These amendments to Unidentified Gas would consist of energy charges only; there would be no Transportation Commodity element. These amendments would be processed monthly, at portfolio level only, not attributable to individual Supply Meter Points.

LDZ Measurement Errors would be treated in the same way, with the opposite entry being included in the Reconciliation Scaling Adjustment.

Resynchronisation (Reconciliation BRD 8.5)

The concept of resynchronisation already exists for DM Supply Meters, where 'drift' between the datalogger readings and physical readings is accounted for and billed/credited in energy and transportation commodity terms.

The Proposals introduce the concept of resynchronisation for an NDM Supply Meter (Products 3 and 4) alongside DM Resynchronisation. Where the Meter Readings are derived, e.g. through a datalogger or other automated Meter Reading equipment, those Meter Readings can be used for daily or periodic reconciliation. However, there would be the capacity for drift between datalogged derived readings and physical readings at the Supply Meter. The minimum requirements for resynchronisation frequencies are set out above.

There would be a new requirement to perform resynchronisation within a set timeframe and for the Transporter to be advised of the outcome, including any new Meter Readings. Resynchronisation would cause a re-reconciliation back to the date of the

last resynchronisation. The same principles as for current DM resynchronisation would apply, with the drift treated as arising equally across the period.

There would be no requirement for resynchronisation on smart meters or other equipment which transmits the actual index of the Supply Meter.

AUGE (Allocation of Unidentified Gas Expert) (Reconciliation BRD 8.14)

The introduction of an industry wide energy smear (Allocation Scaling Adjustment) would supersede the current RbD arrangements. The allocation gas expert (AUGE) would no longer be required.

Impacts on other Processes (Reconciliation BRD 8.9)

The Meter Reading validation described above would remove the need for the current User Suppressed Reconciliation Value (USRV) ('NDM filter failure') and Suppressed Reconciliation Value (SRV) processes given that all Meter Readings which pass the User and Transporter validations are deemed suitable for use in downstream processes, e.g. reconciliation and AQ. It is anticipated that the current 'queues' of USRVs awaiting attention from Users would be likely to be replaced by rejected Meter Readings awaiting investigation and correction/resubmission by Users. The volume of rejected Meter Readings would depend on a large number of factors, including the accuracy and efficiency of the User's processes, the frequency of read submission and also on the level at which the read tolerances are set. The tolerance values would be a matter for future industry agreement.

Annual Quantity (AQ)

Key Proposals

- Monthly re-calculation of AQ; if a new Meter Reading has been received in the last month
- If Meter Readings have previously passed validation against data held on the Supply Point Register they are deemed suitable for all processes, including AQ
- Removal of amendment and appeals phases of the AQ review
- 2 x SOQs – one for Allocation and another 'fixed SOQ' which applies for 12 months for transportation charging purposes
- Minimum duration of the reference period for AQ calculation is 9 months (compared to current 6 months + 1 day)

Monthly AQ calculation process (AQ BRD 8.2)

Each month new AQs would be calculated for all Supply Meter Points where a Meter Reading has been loaded since the last calculation run. If no new Meter Reading has been received, the AQ would not be recalculated. For a Meter Reading to have loaded to the Transporters' system, it must have passed the validations described above. Where more than one Meter Reading has been received in the month, only the latest dated Meter Reading would be used. Where one or more replacement Meter Reading has been supplied for the latest date, only the last provided reading will be used.

The AQ calculation will use the current approach of a WAALP (Weather Adjusted Annual Load Profile), to covert the actual consumption to a seasonal normal consumption.

New AQs would automatically go live with effect from the 1st of the following month.

Process Description	Timing of AQ calculation	Reads used for AQ calculation	Read Type used for the AQ calculation	SOQ Calculation
Product 1: Daily Metered Time Critical Readings	Monthly	2 reads a minimum of 9 months & max of 36 months apart	Actual read	Shipper Nominates
Product 2: Daily Metered not Time Critical Readings	Monthly	2 reads a minimum of 9 months & max of 36 months apart	Actual read	Shipper Nominates
Product 3: Batched Daily Readings	Monthly	2 reads a minimum of 9 months & max of 36 months apart	Actual read	GT Derives
Product 4: Periodic Readings	Monthly	2 reads a minimum of 9 months & max of 36 months apart	Actual read	GT Derives

AQ Calculation for Products 1 and 2 (AQ BRD 8.3)

The optimum read period for AQ calculation would be 365 days, with a minimum of 9 months and maximum of 36 months.

AQ Calculation for Products 3 and 4 (AQ BRD 8.3)

The optimum read period for AQ calculation would be 365 days. In all cases the minimum reference period is 9 months and the maximum is 36 months.

Validation of AQs (AQ BRD 8.4)

As all reads used in the calculation of AQs have been subject to both User and Transporter validation as described above, there would be no User review and challenge phase prior to their application. A communication file would be issued to Users, detailing all re-calculated AQs. These AQs would go live automatically, and there would not be an "Amendment Window", unlike the current regime.

Correction of AQs (AQ BRD 8.6)

If a User identifies an erroneous AQ, e.g. due to incorrect Meter Readings or Meter Information, they must correct the erroneous data and/or submit a further Meter Reading. The next AQ calculation would use the revised data and would calculate an improved AQ. There will be no retrospective correction of AQs. The new arrangements should allow the User to correct their AQ for the following month.

Any mis-allocation of energy during the period that the AQ was erroneous would be corrected by the normal workings of reconciliation (which would apply to all Supply Meter Points individually).

There would be a mechanism to amend AQs, to be used in exceptional circumstances, e.g. following a significant change in gas usage at a Supply Meter Point. The User would need to submit a request to the Transporter, which would be validated prior to acceptance/rejection.

Calculation and Use of SOQs (AQ BRD 8.8)

Users would continue to nominate SOQs and SHQs for Product 1 and 2 Supply Meter Points.

For Products 3 and 4, the Transporter would continue to calculate the SOQ, using Load Factors or a similar approach. As the AQ varies each month (assuming that monthly Meter Readings are received) so the SOQ and associated EUC for NDM Allocation would also vary. A change in AQ from the 1st of the month would result in a change to NDM Allocation level and patterns from that date.

In addition for Products 3 and 4, SOQs at a snapshot date would continue to apply for a period of 12 months for Transportation charging rate purposes. This would give certainty of costs/income to both User and Transporter. Regular monthly AQ updates would not affect this SOQ, although an AQ correction would change this SOQ and therefore Transportation charging rates.

Communication of amended AQs (AQ BRD 8.12)

Users would be issued with a monthly update of their revised AQs, SOQs and EUCs (where applicable), which shows existing and revised values or the reason why an AQ was not calculated. Note; this communication would only be received where a Valid Meter Reading was loaded i.e. not a rejected Meter Reading.

There will be a separate report of all rolled over (i.e. unchanged) AQs and the reason for non-calculation.

Reporting (AQ BRD 8.13)

It is envisaged that there would be a need for monthly reporting of AQ movements and non-movements, although the exact contents have yet to be finalised.

The same safeguards that ensure that Individual Meter Point Reconciliation takes place at a reasonable frequency should ensure that AQs are updated with reasonable frequency, depending on the AQ of the Supply Meter Point.

Impacts on other Processes (AQ BRD 9.2)

If monthly AQ calculation were implemented at the same time as or after 'universal' Individual Meter Point Reconciliation, then the 'End of Year AQ Reconciliation' for AQ Threshold Crossers (UNC E7.4.3) would no longer be required. If implemented earlier, then End of Year AQ Reconciliation would still be required for a transitional period.

These proposals remove the current AQ Amendment process, as the new values would go live automatically the following month. The AQ Appeal process would also be replaced, as the User would have the ability to amend the AQ at any time by submission of an up-to-date Meter Reading.

Supply Point Register

Key Proposals

• Transporter monitoring of Users' compliance with the check read requirement

- Provision of 12 months' consumption data (where available in the Transporters' systems) to any potential new User
- Improved management of priority and vulnerable customers
- Extension of the scope of the Supply Point Register

The proposals developed by the Workgroup have been documented as 'business principles', as they are generally at a higher level than for the preceding topics.

Monitoring of check read submission (Supply Point BRD 8.1)

The Transporter would develop processes to record, monitor and report Users' performance in obtaining and submitting check reads. Obtaining the check read would remain the User's responsibility: the Transporter would not become the 'Check Read provider of last resort'.

Provision of historic consumption data (Supply Point BRD 8.4)

A User contemplating a Supply Point Nomination would have the facility to obtain 12 months of consumption history, to assist in understanding the consumption levels and patterns of the Supply Meter Point. The completeness of the read history would be dependent on the Meter Reading submission performance of the User(s) owning the site for the previous 12 months. Daily consumption history is only likely to be available for Products 1 to 3, and may not be complete if the Supply Meter Point has only recently been moved to that Product from Product 4, or if there has been an equipment failure.

Improved management of priority and vulnerable customers (Supply Point BRD 8.6)

The Transporter would develop improved processes to record and manage data relating to Vulnerable and Priority Consumers, so that any incoming User can be advised of the current status of the Supply Meter Point. Responsibility for maintaining these data items would remain with the User.

Extension of the scope of the Supply Point Register (Supply Point BRD 8.2)

Single, consistent Supply Point Register services are required, including improvements to:

- Unique Sites
- NTS Supply Meter Points
- LPG Supply Meter Points
- Interconnectors

Invoicing

The requirements are identified as 'Business Principles' as they are generally set out at a higher level than for the preceding topics.

The principles include:

- No wholesale change to current 'thin invoice' and 'thick supporting information' structure
- Requirement for all supporting information to be itemised at Supply Meter Point level wherever possible
- Additional fields may be added to invoice supporting information to allow Users to sort/segment their invoices according to their own needs
- Aspiration for all Adhoc supporting information to be sent by electronic transfer
- Aspiration for a single supporting information format for Adhoc invoices
- Aspiration to reduce the number of Adhoc invoice
- Invoicing Structure (Invoicing BRD Section 8.6)
  - one invoice for all Supply Point initial Capacity charges,

o   one invoice for all Supply Meter Point Commodity charges and

o   an invoice for all Reconciliation and adjustment charges.

Ratchet charges to be issued on the Capacity invoice. Due to timing of the Capacity invoice this would mean that the Supply Point Ratchet charge would be issued on Month +2 after the Ratchet was incurred.

Demand Estimation

The impact of the proposed Project Nexus changes is that a new approach to NDM allocation is required. Allocation processes would need to derive a more robust bottom-up estimate of daily Demand for NDM Supply Points. These estimates would be combined with DM measurements to derive an initial estimate of Unidentified Gas for the LDZ for the day.

The current NDM allocation algorithm would not be sustainable in the new environment as it includes a SF to ensure that all remaining NDM Energy is allocated. It would not be feasible to simply remove the SF from the current formula, as the WCF uses actual LDZ NDM Energy as its start point. NDM Energy is the balancing figure in today's allocation, whereas in the future world a stand-alone estimate of NDM Energy is required. Therefore a new NDM estimation formula for Supply Point Demand is required, which is a better estimate of Demand under the prevailing weather conditions. It is proposed that the current NDM allocation algorithm be replaced by an NDM estimation algorithm. This has been developed by DESC and supports the arrangements identified within this Modification Proposal.

It is proposed that the UNC be modified to describe the NDM Demand Estimation process at a high level, but that the specific details and methodologies other than the NDM Demand Estimation formula itself are set out in a UNC Related Document, which would require the approval of the UNCC for any subsequent amendments.

UNC TPD Sections H2.2 to H2.5 currently set out the details of the key parameters used in NDM Demand Estimation. It is proposed that relevant sections be removed from UNC and form the basis of a UNC Related Document which describes the parameters and high level data sources and processes.

The intention is that TPD Section H, as amended would provide a high level overview which explains to current and future market participants what the key inputs are, and directs the user to the relevant document(s) to gain a fuller understanding. The aim is to balance flexibility for DESC in defining the estimation algorithm (subject to system requirements) with transparency for other market participants. It will be noted that the current proposal is expected to be only a temporary arrangement and that DESC expects the flexibility to introduce a new algorithm after a few years.

The determination of the values of the parameters (ALP, DAF, CWV, SNCWV) would remain the responsibility of DESC.

UNC TPD Section H2.2.2 currently sets out the formula for defining NDM Demand when estimating a 'change of User' Meter Reading for use in NDM Individual Meter Point Reconciliation. That formula is somewhat simpler than the full estimation formula. It is envisaged that the H2.2.2 formula is aligned more closely with the new estimation algorithm.

UNC TPD Section H3 currently sets out the process and formula for setting an NDM AQ. It is proposed that the formula for AQ be amended to use WCF in the denominator as it would be based on actual weather data. EWCF would no longer be needed for AQ calculation.

UNC TPD Section H4 presently sets out the formulae for defining NDM Capacity. The proposed estimation algorithm would continue to allow for the calculation of a peak day Demand, so it is proposed that this section is not changed.

Much of current UNC TPD Sections H2.2 to H2.5 would form the basis of the proposed UNC Related Document, with amendment as necessary to reflect the requirements of the solution identified within this Modification Proposal

In summary:
SPDt (NDM Supply Meter Point Demand for a Day) = $((AQ/365) * ALPt * (1 + (DAFt * WCFt)))$
Where, WCF = CWVt – SNCWVt (Seasonal Normal CWV for a Day)
And, DAFt = WSENSt / SNDt

The formula for the ALP would be unchanged.

The derivation of the new Allocations Scaling Adjustment and Reconciliation Scaling Adjustment would no longer be (directly) a part of Demand Estimation and would be defined within TPD Sections E and H of the UNC.

UNC C1.5 (NDM Output Nominations) currently refers to Section H2 for the determination of Demand ahead of the Gas Day (i.e. Nominations). For the purpose of Nominations, the UNC Related Document would specify that NDM Supply Point predicted Demand for a day would be determined using the Supply Point Demand formula, substituting a forecast value for CWV for the day:

SPDt = $((AQ/365) * ALPt * (1 + (DAFt * WCFt)))$ Where, WCF = Forecast CWVt – SNCWVt

User Pays
Classification of the modification as User Pays, or not, and the justification for such classification
Since substantial changes to central systems are envisaged in this modification, and those changes involve enhancements to the existing UNC regime, this modification technically could fall within the definition of a User Pays Modification. Xoserve has indicated that the additional costs of implementing this modification, over and above the cost of replacing UK Link systems on a like for like basis with existing functionality, amount to about £18m. The actual difference in costs between a like for like and enhanced systems development will never be known since only one procurement and development exercise will be undertaken, based on the identified requirements. Ofgem believes that all reasonably foreseen costs arising from the UK Link replacement have been considered when price controls were set, and funding provided. If significant additional costs beyond this can be demonstrated and justified, these should be considered in the context of the arrangements for funding which are in place following the review of Xoserve's governance and funding. On this basis, given this change is embedded with a wider system replacement, is not proposed to include a User Pays element in the funding equation.

Identification of Users, proposed split of the recovery between Gas Transporters and Users for User Pays costs and justification
Not applicable
Proposed charge(s) for application of Users Pays charges to Shippers
Not applicable
Proposed charge for inclusion in ACS – to be completed upon receipt of cost estimate from Xoserve
Not applicable

4   Relevant Objectives

Impact of the modification on the **Relevant Objectives:**

Relevant Objective	Identified impact
a) Efficient and economic operation of the pipe-line system.	None

b) Coordinated, efficient and economic operation of
   (i)   the combined pipe-line system, and/ or
   (ii) the pipe-line system of one or more other relevant gas
       transporters.
	None

c) Efficient discharge of the licensee's obligations.	None

d) 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.
	Positive

e) Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards… are satisfied as respects the availability of gas to their domestic customers.	None
f) Promotion of efficiency in the implementation and administration of the Code	None
g) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators	None

Implementation of the changes identified within this modification is expected to facilitate Relevant Objective d) Securing of effective competition between Users as follows:

Accurate cost allocations are a fundamental underpinning for effective competition and the changes are expected to lead to more accurate allocation of costs between Users. This results from making use of an increased number of Meter Readings available, such that information is more accurate and up to date; enabling the more frequent calculation of AQs and increasing the number of Supply Meter Points that are reconciled individually rather than in aggregate. This should not only increase the accuracy of costs allocated to those allocated on a daily basis but also the remaining Supply Meter Points since the total allocated to those Supply Meter Points would be expected to be more accurate. It should be noted that this benefit would be enhanced due to the increasing number and timely availability of meter reads following the implementation of SMART metering.

Implementation of the proposed changes would also be expected to increase the predictability of cost allocations for individual Users. This would result from the use of more accurate and up to date consumption data, such that costs allocated to a given portfolio would more accurately reflect the actual consumption that the User would expect to be aware of. Increased predictability would reduce the risk and uncertainty

faced by Users, and consequently could be expected to reduce risk premiums that may be reflected in tariffs and/or prices. This would therefore facilitate the securing of effective competition among existing Users.

Implementation would allow AQs to be updated on a more frequent basis allowing meter reads to correct AQs that are not reflective of actual consumption and would ensure Users benefit from accurate costs based on consumption sooner than possible using existing systems. Increased predictability of costs may be reflected in tariffs and/or prices. This would therefore facilitate the securing of effective competition among existing Users.

With AQs tracking more closely to actual consumption there would be benefits associated with a reduction in energy balancing risk. The availability and submission of more frequent reads would lead to improved accuracy of the AQ, leading to improved allocation, leading to reduced reconciliation variance.   Increased predictability of costs may be reflected in tariffs and/or prices. This would therefore facilitate the securing of effective competition among existing Users.

Increased predictability and certainty of allocations would be expected to allow Users to purchase energy that more closely matches their true requirements. This would also lead to improvements in system balancing and should reduce the likelihood of interventions by the system operator. This will reduce costs for Users and support the development of effective competition.

In addition to facilitating competition for existing Users, the reduction in risk and uncertainty would reduce barriers to entry. Entrants could come to the market with greater confidence that they could align their costs and revenues, and greater confidence that any changes they bring to the market through innovative approaches would be reflected in the costs allocated to themselves – for example, if consumption reducing initiatives are brought to the market, the reduced consumption would result in reduced costs more quickly than if the existing approach were to be retained. This has the potential to facilitate competition by reducing a barrier to entry for those seeking to come to the market with innovative ideas, but would also remove a barrier to existing Users developing new offerings and encouraging customers to switch to their products.

Implementation is likely to lead to the operational benefits such as the smoothing out the AQ process over the year rather than the summer peak of work as currently experienced. Removal of the USRV and "Mod 640" processes would reduce operational costs by reducing administrative complexity and uncertainty, which arises from existing reconciliation processes and should allow efficiency savings, which would therefore facilitate the securing of effective competition among existing Users.

The introduction of settlement products would lead to the volume of unidentified gas being more visible to the industry. This may prompt measures to identify and address the causes of unidentified gas. That the current industry costs associated with the AUGE would no longer be incurred. to be considered at the next meeting

Demand estimation models could be improved in future due to the availability of meter reads leading to increased accuracy in allocation.

5　Implementation

01 October 2015 if an Authority decision is made by 30 June 2014

01 April 2016 if an Authority decision is made by 30 September 2014

With a backstop lead time of 18 months (549 calendar days) should the Authority makes its decision after 30 September 2014.

It should be noted that the industry may be working at risk should a decision be made after 31 March 2014, as system development may be undertaken with no certainty that the modification is to be approved. Xoserve intends to a let a contract for the design and build work by 01 April 2014.

It is assumed that no implementation would take place during the winter operations period for the Gemini system, being [2nd October – 31st March] and that any implementation should be on the first day of the month.

For the proposed Demand Estimation component of this modification, there is no expectation of any immediate change to other Demand Estimation processes. For instance, the current NDM sample of Supply Meter Points should still be fit for purpose and not require any immediate change to support the new approach.

A lead time of approximately 12 months would be required to enable DESC to agree the detailed approach to developing the new algorithms (similar to the current Spring Approach document) prior to the new algorithm going live. For example, agreement in principle by 30 September 2014 for a 1 October 2015 implementation would be necessary.

Impact on the Demand Estimation processes

The solution identified within this Modification Proposal would require a process very similar to the current arrangements to develop the new NDM estimation parameters.
- Data is gathered from a geographically distributed sample of Supply Points, across the full range of AQs
- Once validated, data is aggregated by EUC and statistical relationships to weather in the LDZ are determined
- The current weather data items are temperature and wind speed, but future arrangements may include additional weather items, so the UNC and its Related Document must give the flexibility to expand the list of weather items
- The impacts of holidays and weekends on typical behaviours are also evaluated
- The statistical relationships between demand and weather (plus holidays and weekends) would be combined with the values for weather under seasonal normal conditions to derive the following parameters (to support the new approach):
  - Daily values of the Annual Load Profile (ALP) for each EUC (including Winter to Annual ratio (WAR) Band EUCs if DESC determines that these are still required)
  - Daily values of the Daily Adjustment Factor (DAF) for each End User Category, expressed as a sensitivity to changes in the CWV away from seasonal normal
  - Peak Load Factor, to predict peak day consumption, derived from a long run of actual Great Britain weather experience, mapped against current relationships to demand

6 Legal Text

Text

[The Text for this modification has been prepared by National Grid Distribution and is published along side this report, and no issues were raised by the Workgroup regarding its content.]

7   Recommendation

The Workgroup invites the Panel to:

- AGREE that this modification should be submitted for consultation.