

Business Requirements Document

For

Meter Read Submission and Processing and Settlement

Arrangements for All Gas Meter Points

Xoserve Project Nexus

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1. Introduction

1.1 Document Purpose

The purpose of this document is to ensure that the business requirements associated with the referenced change have been accurately captured, and to clearly specify these requirements to the Project Nexus Settlement Workgroup and Project Nexus UNC Workgroup (PN UNC). Adequate information should be provided to enable the industry to approve the documented requirements for Cost Benefit Analysis at a later stage.

The contents refer to the business scope of the change, and provide descriptions of the business requirements and the relevant 'As Is' and 'To Be' process maps.

This version of the document contains draft business rules for the different options identified by the AMR Workgroup and the Settlement Workgroup around meter reading processes and Settlement arrangements. These options have been documented for further discussion and clarification at the Settlement Workgroup.

The first version of this document is an amalgamation of two documents describing business requirements for the AMR Workgroup and the Settlement Workgroup. The document contains tracked versions of both the mentioned documents. This version and any future versions will contain business requirements for all gas meter points (see section 2.7 for clarification of the scope).

1.2 Related Documents

Documents held on the Joint Office website under Project Nexus, in particular:

- AMR Workgroup meetings
- Settlement Workgroup meetings

<http://www.gasgovernance.co.uk/nexus>

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2. Executive Summary

2.1 Introduction to the Change

This document defines the processes for the submission and processing of Meter Readings and Settlement arrangements for all gas meter points.

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The document has been based on presentations and discussions at the Project Nexus AMR Workgroup and Settlement Workgroup and considering the high level principles agreed at the Allocation Workgroup. The options have been documented for further discussion and clarification. All areas within the document are yet to be agreed and finalised. They are intended to assist discussions in future meetings rather than be a conclusive statement of requirements at this stage.

All square brackets – [] – represent areas for clarification which must be resolved by the Workgroup or by the Project Nexus Workgroup prior to the Business Rules being finalised.

2.2 Change Drivers and Business Goals

2.2.1 Drivers

The drivers detailed below are those identified by the Settlement Workgroup and the AMR Workgroup specifically for the submission and processing of meter readings and settlement arrangements in the gas industry.

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- To reduce the difference between gas nomination, actual consumption and gas allocation.
- Reduce the changes in forecasting & allocations between D-5 to D+5.
- Improve existing allocation processes
- Implement a fairer smearing mechanism
- Visibility of the value of un-allocated energy
- Provide services to enable Shippers to submit more reads for utilising in downstream processes
- Appropriate incentives & obligations on parties for both remotely read metered & dumb metered sites
- To utilise the reads obtained from remotely read meters to improve energy allocation
- Improve the existing meter reading processes and remove the constraints relating to the current system
- Develop solutions appropriate for 'smart' meters

2.2.2 Goals

- In the long term Shippers/Suppliers may choose to have all sites utilising actual daily reads for energy allocation (after the day), energy balancing and settlement processes, dependent on a robust cost benefit analysis.
 - However, this regime is only achievable in a fully 'remote metered' world (or when 'critical mass' of remote meters has been achieved).
 - The requirements and rules described in this document are therefore the arrangements for all directly connected sites during the Smart meter roll-out. These arrangements provide the platform for progression to a daily settlement regime for all gas meter points at a point in the future.
- The goal for the Workgroup is therefore to develop a robust regime for meter reading processes and settlement arrangements and a potential 'stepping-stone' towards the ultimate goal of daily settlement based on daily reads at a point in the future.

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2.3 Change Background

- The changes have been identified as a result of Xserve's Project Nexus consultation for the replacement of UKLink systems and following DECC's consultation on Smart metering and Supplier licence obligation for the installation of advanced meters.

2.4 Summary of the 4 Meter Reading and Settlement Processes

The following processes are a summary of the future meter reading submission and processing and Settlement regime which were agreed at the AMR Workgroup and Settlement Workgroup. The detail is documented under section 5.

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Note: all these processes will be available in the future solution; they are not alternative solutions.

Process – Description	Day Ahead Gas Nomination process	Process for initial Allocation	Process for Energy Balancing close-out	Read Submission timescales	Type of Read Submission
1 – Daily Metered Time Critical Readings	Shipper nominates (singly or in aggregations)	Uses daily read	Uses daily read	By 10am on GFD+1	All reads – daily on GFD+1
2 - Daily Metered not Time Critical Readings	Shipper nominates (in aggregations)	Transporter estimate	Uses daily read	By end of GFD+1 (05.59 am)	All reads – daily by end of GFD+1
3 – Batched Daily Readings	Shipper nominates (in aggregations)	Transporter estimate	Transporter estimate	Daily Reads in batches	All reads – in batches – to an agreed frequency
4 – Periodic Readings	Shipper nominates (in aggregations)	Transporter estimate	Transporter estimate	Periodic	Periodic reads – to an agreed frequency

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Note:

- GFD+1 is the day following the Gas Flow Day
- For Process 1; Daily Metered Time Critical sites; these are Daily Metered Supply Points as defined in UNC (G1.5) or; where the GT specifies the Supply Point is DM Mandatory for network operation activities or the Shipper nominates the site as 'critical' due to the impacts on Allocation and Energy Balancing.
- All 'days' specified within this document refer to calendar days except where stated 'business days'.

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2.5 Process Issues

At the AMR Workgroup meeting on the 31st March 2010, attendees identified issues and constraints with the existing meter reading processes. The discussions were

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based on the processes designed for the Daily Metered Elective (DME) regime. The following issues were raised:

- Calculation & provision of estimated reads
- Deadline for receipt of daily reads
- Replacement of reads (actual or estimated)
- Limits on volumes
- Backstop where no reading provided (estimated or actual)
- Transfer reading - Close out of an estimated reading where an actual is available

The following issues were identified in the Settlement Workgroup during March 2011;

- Difference in values between gas nominations, actual consumption and allocations
- Profiling and Scaling Factors are not appropriate
- Estimation methodology
- Unfair smearing mechanism
- Current regime does not reflect changes in site consumption quickly

The following issues were raised during the Project Nexus Consultation (taken from the [Initial Requirements Register](#)):

IRR Ref.	Issue
4.1	Removal of volumes quotas and the ability to support half-hourly reads
4.2	Use of a data aggregator to reduce volume of data received by Xoserve
4.3	Additional and more accurate energy consumption information
4.4	Allow more frequent reads from AMR to feature in daily reconciliation
4.5	All energy consumption data should be used to ensure that costs are targeted at those that incur them on the system
4.6	Daily energy allocations for a large part, if not all, of the metering points
7.1	Submit volumes as an alternative to meter readings
10.7	Use energy consumption data to develop an additional SSP profile for I&C sites
10.8	Shipper demand allocation data split out by market sector (SSP & LSP) and by LDZ on a daily basis
10.10	Create a new EUC band for Small Supply Points
10.11	Review of the process of Winter Annual Ratio calculation, and the subsequent allocation of EUC and thus load profile
13.9	Meter read window preferably abolished or at least extended significantly from its current 15 days

2.6 Benefits

The benefits will need to be aligned with the Transporters relevant objectives.

- Improve accuracy of the energy allocated
- More appropriate way for allocating energy in a 'smart' world
- Utilise the reads from remotely reads meters
- Industry will have a better understanding of the value of unallocated energy.
- Utilising up-to-date information

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- **More reflective of actual consumption**

2.7 Scope

In Scope

Function:

- Receipt and processing of meter readings
- After the day gas allocations
- Share of un-allocated energy
- Estimation methodology for allocation purposes
- Estimation methodology for missing reads
- Read validation
- Incentives & obligations

Market Sectors:

- All remotely read metered (Smart & AMR) sites
- All dumb metered sites

Out of Scope

Function:

- Reconciliation processes
- Shrinkage calculation
- AQ processes
- Transportation Invoicing

Market Sectors:

- Receipt and processing of meter reads for;
 - NTS Telemetered sites
 - [NDM CSEPs]

2.8 UNC & Licence Impacts

- Uniform Network Code Validation Rules
- UNC Section G
 - 1.5 Daily Read Metering
 - 2. Supply Point Registration
- UNC Section H
- UNC Section M
 - 1.5 Validation
 - 3. Meter Reading: Non Daily Read Supply Meters
 - 4. Daily Read Supply Meters
 - 5. Provision of Daily Read Meter Readings to Users
 - 6. Provision of User Daily Read Meter Readings to Transporters

2.9 UNC Process Impacts

A high level assessment has been carried out on the following processes;

- Demand Estimation **is likely to be** impacted by the processes described in this document although a larger population of sites with the ability to submit daily reads may improve the size of the sample available for the Demand Estimation processes.

A full process assessment was not conducted. Other processes will be assessed as and when potential interactions are identified.

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2.10 Interaction with Project Nexus High Level Principles

- The following draft business rules are not in alignment with the preferred option for Allocation as described in the Allocation Principles report, which envisages settlement based on daily reads for all 21m gas customers, whether Smart or AMR. Processes 3 and 4 are not consistent with this Principle.

- The requirement for regular daily estimation of site consumption, particularly those where only periodic readings are received, will probably necessitate the continuing use of an AQ, which is not in alignment with the preferred outcome of the AQ Principles workgroup of a 'No AQ' regime.

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3. Design Considerations

3.1 Implementation Timescales:

- Implementation of the developed solution will be confirmed once all requirements are captured following the Project Nexus Requirements Definition Phase.

3.2 Dependencies:

- Use of Process 1; Daily Metered Time Critical sites, for DM Mandatory sites (as per Section G1.5) is dependent on the unbundling of DM services.
- Approval of the requirements by PN UNC.
- Approval by Ofgem following the appropriate UNC Modification process.

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3.3 Risk & Issues:

- Any incorrect reads loaded into the system for processes 1 & 2 will have an impact on the existing Allocation regime. This is as per the current process however, with the potential increase of sites moving to a daily metered regime the effects and impacts may be far greater on the energy allocated to non daily read sites.
- A concern was raised by workgroup members regarding the D-7 estimate for Process 2 sites (Section 5.6.2). It was felt that the D-7 estimate may not be appropriate for smaller/weather sensitive I&C sites as it does not take into account any fluctuations in the weather.
- Not all Shippers/Suppliers attend the Workgroups or are represented therefore there may be opposition to any potential Modifications raised.
- DCC scope and services may be different to that expected by the workgroup and so could change the business requirements.

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3.4 Constraints:

- Allocation processes commence at 1pm on the day following the Gas Day (GFD+1). Any new/amended processes identified in this document must coordinate with the existing Allocation timescales.
- Final Calorific Value (CV) is not known until GFD+5; CV is used for the calculation of energy.

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3.5 Assumptions:

- Shippers will submit validated meter readings; not energy (kWh) or volume (consumption)
- The requirement for aggregate reconciliation is expected to diminish or be replaced with meter point reconciliation.
- Some LDZ sites will continue to be daily metered (and reads received daily) and their consumption is deducted from the allocation process
- A smearing mechanism for un-allocated energy will continue to be required
- AUGE role and/or methodology may require amending via a Modification as a result of the revised settlement arrangements
- These business rules will need to be appropriate for dumb metered sites as well as remotely read sites

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- Continual monitoring to take place of SMIP developments to ensure alignment with parties obligations and DCC services
- Energy allocation processes will continue to run at 1pm on GFD+1
- Shippers will continue to have the obligation to submit reading data to the GT.
- Any additional Gas Transporters charges will be billed in line with User Pays principles where appropriate
- “Must Reads” will continue to be a Gas Transporters responsibility.
- There will continue to be a requirement in the gas industry to have Daily Metered sites where reads are obtained and submitted daily for the following two scenarios;
 - System critical (for network operation activities)
 - Process critical (for energy balancing & allocation processes)
- The existing UNC requirements for a “Valid Meter Read” (M3.1.4) will continue to apply for the purposes of the Must Read requirement. A “Valid Meter Read” is where the following conditions are satisfied:
 - Meter Reading provided by a Meter Reader
 - Customer Reading
 - Meter Reading provided by means of a Remote Read
- A re-synchronisation is only required on certain types of metering equipment capable of transmitting derived daily reads.
- All meter readings submitted to the GT will be subject to ‘logic checks’. Any readings that fail these checks will be notified to the Shipper along with those reads that have been successful, as per existing UNC rules (Section M). Validation of meter readings will remain the responsibility of the Shipper.
- Obligations on Shippers will need to continue to ensure that validation of the meter reading is carried out and only accurate reads are submitted to the GT.
 - The UNC Validation Rules document will need to be amended to reflect the changes.
 - The validation rules described under section 5.14 are the minimum requirement of validation that must be undertaken.
- ‘Exit Close Out’ (GFD+5) continues as per existing UNC rules (Section E1.8):
 - 5th calendar day after the gas flow day.

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3.6 Design Considerations

- For Processes 1, 2 & 3 (daily read sites); Shippers can either elect to provide their own estimates for a site or for the Gas Transporters to produce an estimate on their behalf. This would not apply to Process 4 sites as the ‘Allocation’ arrangements apply to missing reads.
- For Process 2 sites (Daily Metered Not Time Critical Readings), where a valid read is received before 10.00 am the read can be used for Allocation purposes instead of the estimated energy calculated for the purposes of Allocation. The solution will need to consider if the Allocation process should check for a read before estimating the allocation of energy for the site or check after the estimate has been calculated and override if a read from the Shipper has been loaded.
- It is not presently feasible for Shippers to submit gas energy values (kWh) in a timely manner since calorific value (CV) is not available until after close-out at GFD+5. It would therefore not be possible at present for Shippers to submit kWh to meet the deadlines specified in Processes 1. and 2. below. Whatever system solution is developed it should be flexible enough to cope eventually with provision of either a meter reading, a volume reading, or an energy value. However, there are potential cost implications relating to the level of system complexity.

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3.7 Volumes

During discussions at the Workgroups it is anticipated that larger I&C sites will adopt Processes 1, 2 or 3 where daily reads are submitted. Smaller I&C sites and domestic sites will mainly use Processes 3 & 4. Based on this the following volumes are only an estimated guide at this time. A more accurate view of possible number will be required for cost benefit analysis and system design at a later stage:

<u>Process 1: Daily Metered Time Critical</u>	<u>1,000 to 2,000 meter points</u>
<u>Process 2: Daily Metered not Time Critical</u>	<u>1,500 to 29,000 meter points</u>
<u>Process 3: Batched Daily Readings</u>	<u>1,500 to 10,000,000 meter points</u>
<u>Process 4: Periodic Readings</u>	<u>29,000 to 21,500,000 meter points</u>

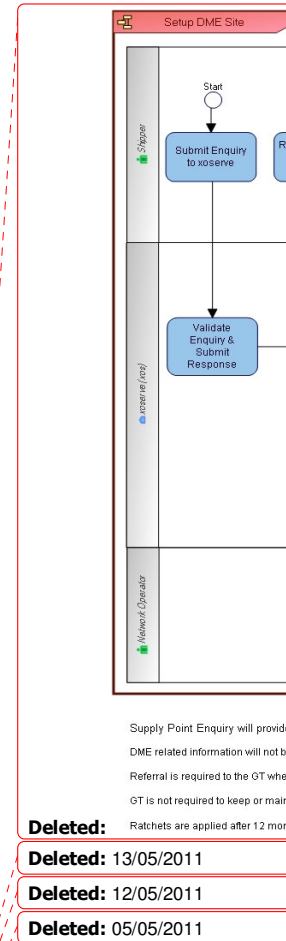
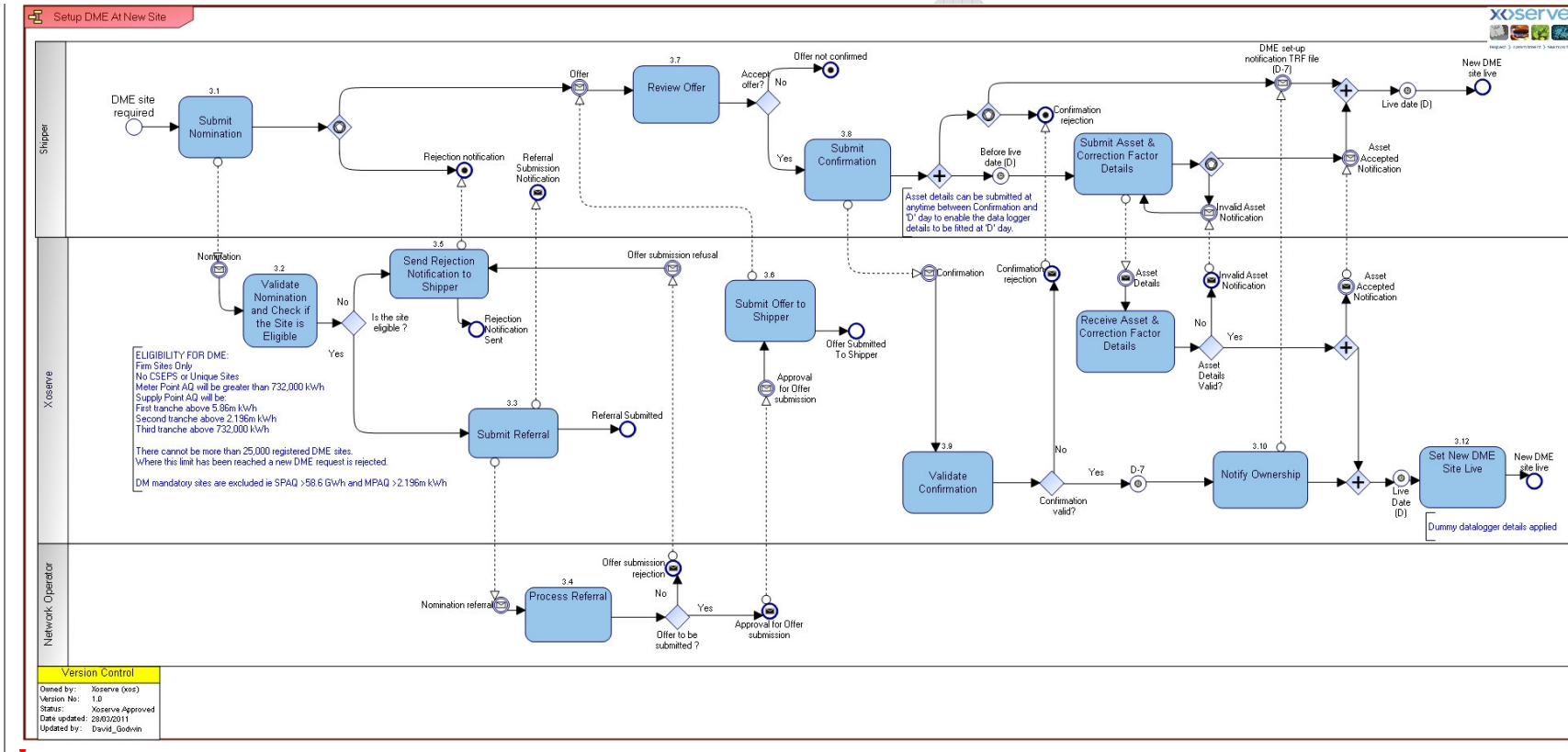
3.8 Costing Options

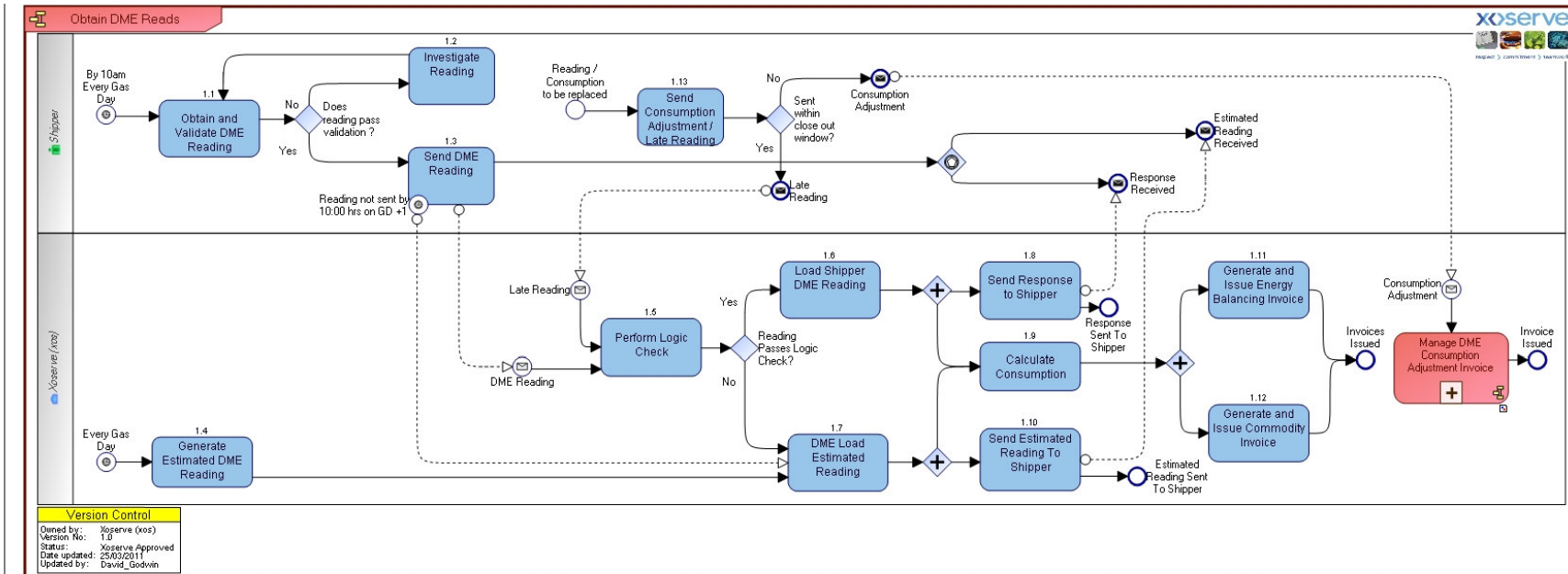
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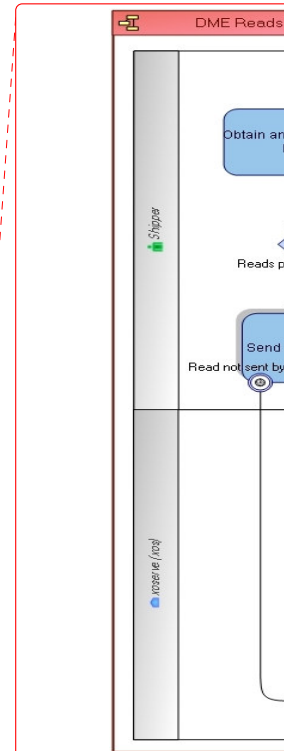
4.1 Current Process & Process Maps





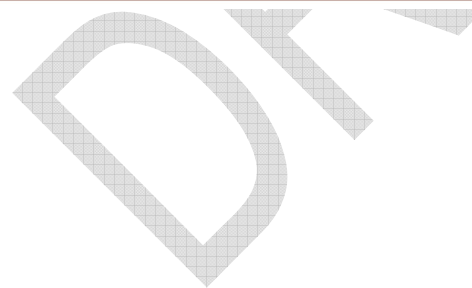
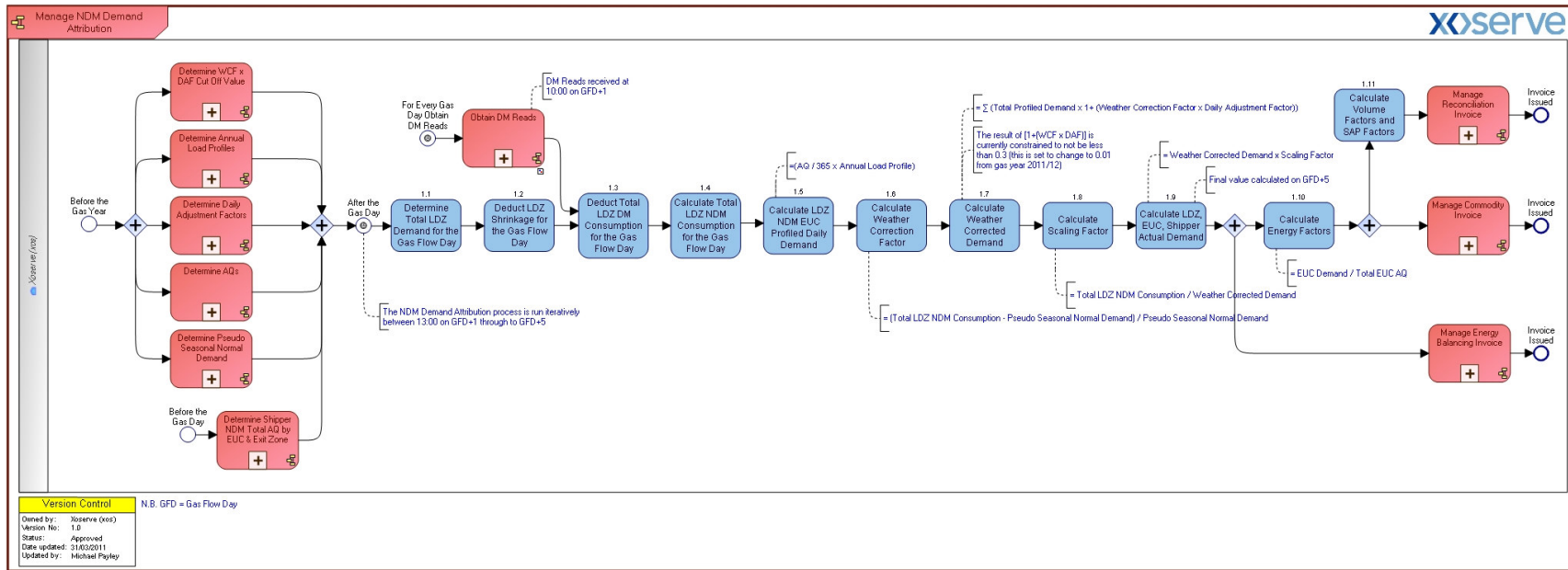
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Version No:	1.0
Status:	Xoserve Approved
Date updated:	25/05/2011
Updated by:	David_Godwin

Reads to be submitted by a deadline. Any read submitted after the deadline will be processed the following day.
 Validations carried out by xoserve on the read is a sense check only. 1. Whether the shipper is the Registered User, 2. Whether the reading has the correct number of digits
 Zero consumptions will not be subject to validation, will be accepted based on the Shipper completing the validation prior to submission
 Existing DM read estimation process is used: D-7 or AQ/365
 Estimated reads can be replaced with an Actual read upto D+5
 Actual reads can not be replaced



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4.2 To Be Process & Process Map

Under development.

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5. Business Requirements Definition

5.1 Gas Nominations (before the day)

There are a number of approaches for managing 'before the day gas nominations', two of which are documented below:

1. [Obligations for submitting Gas Nominations are unchanged:
 - a. Shippers submit Nominations for sites where meter reads are submitted daily
 - b. GT calculates gas nominations on behalf of Shippers in aggregate for sites where daily reads are not submitted daily and used for allocation processes]
- or
2. [Shippers will nominate energy for all of their sites ahead of the day. This nomination will be in aggregate for many of these sites.]
3. [Total Shipper gas nominations will be subject to a 'Nominations Scaling Adjustment' (smear) to ensure that total gas nominations match forecast gas demand.]
4. A 'Nominations Scaling Adjustment' (Smear) will be applied at LDZ and Shipper portfolio level and will be visible to Shippers.

5.2 Energy Allocation and Balancing

For sites within 'Batched Daily Readings' and Periodic Readings' (Processes 3 & 4) the following rules will apply, for clarity, these allocation and balancing rules do not apply to sites in the 'Daily Metered Time Critical' and possibly the 'Daily Metered not Time Critical' regime if the read is received before the deadline;

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- 5.2.1 Daily Energy allocation will be calculated on GFD+1 by the GT
- 5.2.2 The estimate generated for energy allocation is described below under 'Estimation methodology'
- 5.2.3 The closed out energy balancing position at GFD+5 will be based on the estimate calculated by the GT.

5.3 Estimation Methodology for GFD+1 Allocation

5.4 Share of Un-Allocated Energy

- 5.4.1 Each LDZ is balanced separately. The 'Allocations Scaling Adjustment' is calculated daily and applied to all sites within the LDZ
- 5.4.2 Shrinkage is deducted before un-allocated energy is calculated
- 5.4.3 The share of un-allocated energy is calculated as follows;
 - Total of all site consumptions (daily read sites) and the total of all estimates will be combined daily to give the total LDZ consumption.
 - Compare total LDZ consumption to the total actual LDZ offtake (after Shrinkage deduction).
 - Allocation Scaling Adjustment % is calculated as:

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$$\frac{(\text{Actual LDZ offtake} - \text{Total LDZ site level consumption})}{\text{Total LDZ site level consumption}}$$

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- 5.4.4 The difference between the two could be a positive or negative and will be apportioned equally to all sites within the LDZ; smart metered, DM, AMR and dumb meters.
- 5.4.5 All sites within the LDZ would receive the same % correction applied to the site's consumption for the day.
- 5.4.6 The Allocation Scaling Adjustment will be applied at LDZ and Shipper portfolio level, not at individual site level.
- 5.4.7 A positive value denotes an increase to site level consumption and a negative value would decrease the site level consumption.

Example:

Actual LDZ offtake	=	1,010,000 kWh
Total of individual Site level consumptions	=	1,000,000 kWh
Difference	=	10,000 kWh
Allocation Scaling Adjustment	=	+1%

+1% Allocation Scaling Adjustment (smear) applied to the consumption of all sites within the LDZ

5.5 Process 1 – Daily Metered Time Critical Readings

- 5.5.1 This process applies to large sites where daily balancing is currently mandatory due to size/location or other factors. Timely receipt of reads is critical to the accuracy of the Allocation process for non daily read sites. This includes all Supply Points with an AQ >58.6m kWh or NTS sites. Other sites may be elected to use this service by the GT due to network operations or by the Shipper.
- 5.5.2 A reading must be submitted to the GT by the Shipper by 10am each day for the previous gas day (GFD+1).
- 5.5.3 The reading submitted may be an actual read (obtained from the device) or an estimated read. The read notification must specify whether the reading is actual or estimated.
- 5.5.4 All estimated reads (calculated by the GT or the Shipper) will use a standard methodology under this process. This standard is described in 5.5.8.
- 5.5.5 Content of the read information exchange between the Shipper & GT is detailed under Section 5.12.
- 5.5.6 On receipt of a read the GT will perform 'Logic Checks'. Notification will be issued by the GT to the Shipper detailing the meter readings that have failed and those that have passed the 'logic checks'.
- 5.5.7 If a valid reading (actual or estimated) is not received by 10am on GFD+1, the GT will estimate a reading and notify the Shipper of the details by 1pm on GFD+1.
- 5.5.8 The estimated reading will be calculated from the previous day's reading to produce an identical gas volume to the gas day 7 days earlier (a "D-7" estimate) or, if no previous consumption recorded for the site, the estimate will be calculated by AQ / 365.

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- 5.5.9 An estimated read, GT or Shipper estimate, can be replaced with an actual reading by the Shipper before Close Out (GFD+5).
- 5.5.10 Any actual readings (including an actual which replaced an estimate) can be replaced before end of GFD+5 with a new actual or estimated reading
- 5.5.11 The closed-out energy balancing position will be based on the last valid reading supplied (or calculated) before Close Out (GFD+5).
- 5.5.12 Shipper validation of daily reads is as per the UNC Validation Rules, Section 4, for sites with Daily Read Equipment and further GT validations are detailed under section 5.13.3 of this document.
- 5.5.13 Read submission incentive arrangements are described under section 5.14.
- 5.5.14 **The "Must Read" requirement will not be applicable for this process.**
- 5.5.15 Replacement of reads after GFD+5 will be covered by the Retrospective Updates Business Rules.

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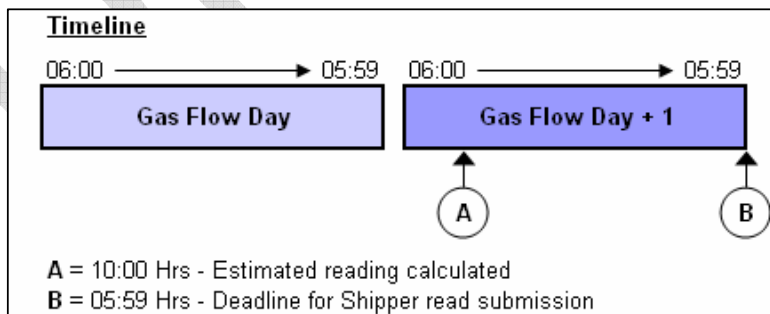
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5.6 Process 2 – Daily Metered Not Time Critical Readings

- 5.6.1 Sites for which Process 1 above is compulsory cannot use this process.
- 5.6.2 Between 10.00 am and 1.00 pm on GFD+1 the GT will estimate a reading for the purposes of Allocation. This reading will be calculated from the previous day's reading to produce an identical gas volume to the gas day 7 days earlier (a "D-7" estimate) or, if no previous consumption recorded, the estimate will be calculated by AQ / 365.
- 5.6.3 Where a valid read is loaded before 10.00 am on GFD+1 by the Shipper the reading will be used for Allocation, the estimate described in section 5.6.2 will not be utilised for the purposes of Allocation.
- 5.6.4 If a reading has not been loaded by 10.00 am a valid reading must be submitted by the Shipper before the end of the day on GFD+1 (05.59 am following the gas day the meter reading relates to), see figure below for clarification of the timeline:



- 5.6.5 The reading submitted by the Shipper may be an actual read (obtained from the device) or an estimated read. The read notification must specify whether the reading is actual or estimated.
- 5.6.6 If a valid reading (actual or estimate) is not received by the GT by end of the gas day on GFD+1 the GT will estimate the reading (this is the estimate calculated for Allocation purposes as described in 5.2.2) & notify the Shipper of the details after the read submission window closes.

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- 5.6.7 The estimate can be replaced with an actual reading before close out (GFD+5)
- 5.6.8 All estimated reads (calculated by the GT or the Shipper) will use a standard methodology under this process. The estimation methodology is described in section 5.6.2.
- 5.6.9 Content of the read information exchange between the Shipper & GT is detailed under Section 5.12.
- 5.6.10 Notification will be issued by the GT to the Shipper detailing the meter readings that have failed **and those that have passed** system checks.
- 5.6.11 If the first Shipper read submission is an estimate, it can be replaced with an actual reading,
- 5.6.12 Any actual Shipper readings (including an actual which replaced an estimate) can be replaced with a new actual reading or estimated reading before end of GFD+5.
- 5.6.13 The closed-out energy balancing position will be based on the last reading supplied (or calculated) before end of GFD+5.
- 5.6.14 Read validation rules are described under section 5.13.
- 5.6.15 Read submission incentive arrangements are described under section 5.14.
- 5.6.16 Must Read requirements are described under section 5.16
- 5.6.17 Replacement of reads after GFD+5 will be covered by the Retrospective Updates Business Rules.

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Deleted: required to ensure that valid daily reads are submitted for 97.5% of sites in a timely manner (in line with the DME Regime UNC Section M6.1.1, 6.1.3 & 6.1.4). The reads can be actual or estimated. The 97% will be based on reads expected per day per Shipper portfolio.

Deleted: Incentive arrangements are required to ensure a maximum number of consecutive estimates for a site. The "Must Read" requirement will apply where a "Valid Meter Read" is not received for 4 consecutive months as per UNC Section M3.6 for Monthly Read sites

5.7 Process 3 – Batched Daily Readings

- 5.7.1 Sites for which Process 1.above is compulsory cannot use this process.
- 5.7.2 Daily readings are not routinely submitted daily or within GFD+5 under this process.
- 5.7.3 Readings for each gas day are submitted periodically in batches, to a pre-notified frequency. These frequencies are weekly, fortnightly or monthly.
- 5.7.4 The maximum planned interval between the end dates of read batches under this process is monthly. There is no specified deadline for submitting a batch of reads except as described in section 5.16.
- 5.7.5 Each reading submitted within a batch may be an actual read (obtained from the device) **or an estimated read**. The read notification must specify whether the reading is actual or estimated.
- 5.7.6 All estimated reads calculated & submitted by the Shipper will use a standard methodology under this process
- 5.7.7 The standard methodology for the estimated reading to be determined during Reconciliation topic.**
- 5.7.8 A read file can contain reads for a mix of MPRN's with different read frequencies, for example, file contains 5 days consecutive reads for site A, 30 days consecutive reads for site B etc.
- 5.7.9 Content of the read information exchange between the Shipper & GT is detailed under Section 5.12.

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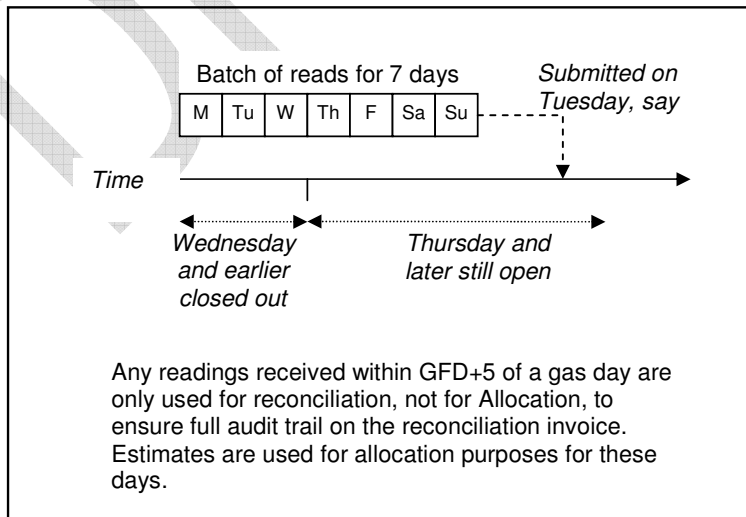
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- 5.7.10 System 'Logic checks' will be carried out by the GT on the reads received from the Shipper. A 'completeness' check shall also be performed on receipt of the communication to ensure all reads expected (as per 5.13.3) have been received.
- 5.7.11 For an MPRN, if there is a gap between the last reading date of the previous batch and the first reading date of the new batch, energy will be apportioned across the missing days. The apportionment methodology will be determined under the Reconciliation Topic.
- 5.7.12 For an MPRN, if there is a gap of one or more days within the sequence of reads in a batch, energy will be apportioned across the missing days. The apportionment methodology will be determined under the Reconciliation Topic.
- 5.7.13 A notification will be sent to the Shipper by the GT detailing the **accepted reads**, rejected reads and any days where a read was missing within a read communication file.
- 5.7.14 **Where the GT has calculated energy for reconciliation purposes due to a missing read or rejected read, the energy will be converted to an estimated reading & issued to the Shipper.**
- 5.7.15 **Shippers can submit meter reads for previously rejected reads or missing read days within D+? (to be discussed during Reconciliation).**
- 5.7.16 Replacement of readings **after GFD+5** will be covered by the Retrospective Updates Business Rules.
- 5.7.17 Read validation rules are described under section 5.13.
- 5.7.18 On receipt of a batch of accepted reads the GT will perform individual daily reconciliations for each gas day up to and including the date of the last reading in the batch (see 5.7.11 and 5.7.12 above regarding filling in of gaps).
- 5.7.19 Note: under this approach some readings are received within GFD+5, however these are not used for allocation & daily settlement, see diagram below:



- 5.7.20 Read submission incentive arrangements are covered under section 5.14.

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5.7.21 Read submission deadline is described under section 5.15.

5.7.22 Must Read requirements are described under section 5.16

5.7.23 Treatment of the resulting reconciliation will be determined under the Reconciliation Topic.

Deleted: Shippers will have an obligation to ensure that valid daily reads (actual or estimated) are submitted for 90% of 'Daily Reconciled sites' in the Shippers portfolio in any given calendar month (as per UNC Section M3.4.1).

Deleted: Incentive arrangements are required to ensure a maximum number of consecutive estimates for a site. The "Must Read" requirement will apply where a "Valid Meter Read" is not received for 4 consecutive months as per UNC Section M3.6 for Monthly Read sites

5.8 Process 4 – Periodic Readings

5.8.1 Sites for which Process 1. above is compulsory cannot use this process.

5.8.2 Daily readings are not submitted to the GT under this process, although the supplier and shipper may chose to receive these reads from the metering equipment.

5.8.3 A single actual meter reading is submitted periodically to a pre-notified frequency. The frequency can be weekly, monthly, quarterly, six-monthly or annually.

5.8.4 Minimum and maximum read frequencies will be required based on consumption / meter type / market sector. The maximum planned interval for submission of readings under this process is annual.

5.8.5 The reads that are submitted will be actual reads and not estimated reads.

5.8.6 Content of the read information exchange between the Shipper & GT is detailed under Section 5.12.

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5.8.7 Notification will be issued by the GT to the Shipper detailing the meter readings that have failed and those that have passed 'logic checks'.

5.8.8 Replacement of readings after GFD+5 will be covered by the Retrospective Updates Business Rules.

5.8.9 Read validation rules are described under section 5.13.

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5.8.10 On receipt of a valid reading the GT will perform reconciliation for each gas day since the last read date up to and including the date of the current reading.

5.8.11 Must Read requirements are described under section 5.16

5.8.12 Read submission incentive arrangements are covered under section 5.14.

5.8.13 Read submission deadline is described under section 5.15

Deleted: Obligations will continue to be required within UNC (Section M3.4 & M3.5) to ensure that actual "Valid Meter Reads" are submitted in any period of 12 months for: ¶ 90% of sites of which the AQ is greater than 73,200 kWh ¶ 70% of sites of which the AQ is equal to or less than 73,200 kWh ¶

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5.9 Change of Shipper

5.9.1 A Proposing Shipper can submit a Supply Point Enquiry to identify the regime (Process) and (for Processes 3 & 4) the Meter Reading Frequency the site is registered under.

5.9.2 The Proposing Shipper to be notified of which Process currently applies and the current read frequency (where applicable) as well as the elected/proposed via the Nomination response and the Confirmation response

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- 5.9.3 A Proposing Shipper will need to specify on the existing Nomination and Confirmation communication the election of which regime (Process) and, for Processes 3 & 4, the Meter Reading Frequency.
- 5.9.4 To ensure the relevant fields are populated the records submitted by the Shipper will be mandatory on the Nomination and Confirmation request; a default will not be applied.
- 5.9.5 The Outgoing Shipper may continue to submit reads for D-1 of the transfer registration date upto:
 - 5.9.5.1. D+5 for Processes 1 and 2
 - 5.9.5.2. X for Processes 3 and 4
- 5.9.6 A batch of reads (Process 3) or periodic read (Process 4) can not be submitted until:
 - a valid transfer read is loaded or where no read is received
 - [D+6 days] after the transfer registration date following the GT estimated opening read.

5.10 Change of Shipper Transfer Readings

- 5.10.1 For all Shipper transfers the following will apply for the submission and processing of the opening and closing meter reading
- 5.10.2 The Incoming Shipper obtains and submits the transfer read.
 - 5.10.2.1. For Process 1 & 2 the transfer read to be obtained on the transfer date and submitted on D+1.
 - 5.10.2.2. For Process 3 & 4 the transfer read to be obtained on the transfer date & submitted within close out (GFD+5).
- 5.10.3 The transfer read submitted by the Incoming Shipper can be an actual or an estimated read.
- 5.10.4 A valid transfer read submitted by the Incoming Shipper will be issued to the Outgoing Shipper as the closing read by the GT by D+6 at the latest.
- 5.10.5 For sites under Processes 1 & 2, where a read is not submitted for the transfer date within GFD+5 the estimate calculated on GFD+1 by the GT will be used for the purposes of the Opening & Closing Meter Read and submitted to both the Outgoing and Incoming Shipper by D+6.
- 5.10.6 For sites under Processes 3 & 4; where a transfer read is not submitted for the transfer date the GT will calculate an estimated read and submit to both the Outgoing & Incoming Shipper on D+6. The estimate to be calculated as per the methodology for the relevant Process
- 5.10.7 A transfer read (Shipper read or GT estimate) can be replaced if submitted & accepted within D+5.
- 5.10.8 The Incoming or Outgoing Shipper can challenge the transfer read using the existing Shipper Agreed Read process (UNC M3.8). It will be the Incoming Shippers responsibility to submit the Shipper Agreed Read.
- 5.10.9 The transfer read (read taken on the transfer effective date) may be contained within the read communication containing the batch of reads or the periodic read and will be accepted as the transfer read if valid.

Deleted: except where there is a change in regime from AMR to NDM, in which case the transfer read process will be as per 5.12.3.

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Deleted: A batch of daily reads (Process 3) or a periodic read (Process 4) will not be accepted until a valid transfer read has been loaded. The read communication for the MPRN will be rejected and notification issued to the Shipper.

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5.11 Election for change in regime where there is no change in Shipper

5.11.1 Change in read frequency: The GT needs to know **2 business days** before the gas day of the elected read frequency (Processes 3 & 4 only) for planning and estimation purposes. A change in Meter Reading Frequency can only be effective **2 months** after the current Meter Reading Frequency effective date, except where;

- There has been a change of Shipper.
- **There has been a meter exchange or change of equipment**

5.11.2 Change in regime: An election for a change of regime must be received and accepted by **8 business days before the gas day of the elected regime**. A change in regime can only be effective **2 months** after the current regime effective date.

5.11.3 Only the Registered User or a Confirming User (with a confirmation about to become effective after D-7) can submit an election described in section 5.11.1 or 5.11.2. If the requesting User will not be the Registered User on the day to which the election refers, the election will be rejected.

5.11.4 A meter reading (actual or estimated) will be obtained on the effective date of the change in regime or meter read frequency and submitted within [D+5]. Where a read is not loaded the GT will estimate a read and submit to the Shipper on [D+6].

5.12 Read Communication Content

5.12.1 Information exchange from the Shipper to the GT;

- MPRN
- **Confirmation Number**
- Meter Serial Number
- Reading
- Date of Reading
- **Reading Source (customer, transmitted, MRA)**
- Through the Zero Count
- **Actual or Estimated Reading**
- Derived or Actual Read
- **Reading Units**
- **Metric or Imperial Indicator**
- **Meter Type (e.g. AMR, Smart)**
- Read Reason Code (Opening Read, Replacement Reading)
- Converter Reading
- **Start & End Date of Read Batch (Process 3 sites)**
- Read Verified Indicator

5.12.2 Information Exchange from the GT to the Shipper;

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Deleted: <#>Site transfers to or from the NDM regime ¶
 <#>Request to transfer to or from the NDM regime where there is no change in Shipper is submitted via a re-confirmation providing 8 business days notice. ¶
 <#>Request to transfer to or from the NDM regime where there is a change in Shipper to follow the existing Nomination & Confirmation process. ¶
 <#>For transfers from the AMR regime to the NDM regime; ¶
 <#>The existing timescales for submitting a transfer read will be applied: A valid meter reading to be obtained between 5 business days before and 5 business days after the transfer date and submitted to the GT by 10 business days of the transfer date. ¶
 <#>Where a valid read is not loaded by D+10 the GT will generate an estimated read & notify by the Incoming & Outgoing Shipper by D+15 business days. ¶
 <#>For transfers from the NDM regime to the AMR regime; ¶
 <#>A valid meter reading to be obtained on the transfer date & submitted to the GT. ¶
 <#>The transfer read to be loaded within GFD+5 days of the transfer date. Where a valid read, actual or estimate, is not loaded by the Shipper, the GT will estimate the transfer read on GFD+5 in line with the estimating methodology for the relevant process & notify both the Outgoing & Incoming Shipper of the estimated read on GFD+5. ¶
 <#>Any challenges to the transfer read will follow the Shipper Agreed Reads process. ¶
 ¶

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- **Response:** 'File' Level
 - Total Number of Reads Received
 - Total Number of Accepted Reads
 - Total Number of Rejected Reads
- **Response:** At MPRN Level for rejected or missing reads only:
 - MPRN
 - Reading
 - Date of Reading
 - Rejected Indicator
 - Rejected reason Code
- Estimated Read Notification;
 - Estimated Reading
 - Date of Estimated Reading
 - Reason Code for Estimated Reading (e.g. read failed validation, no read received)

5.13 Read Validation

5.13.1 Shipper validation carried out for all sites where a daily read is received, either a read received daily or daily reads received at set intervals, excluding those sites in Process 1;

- A completeness check to ensure that all readings expected have been received, including Converter readings where installed
- Tolerance check to ensure the consumption derived from the reading is within the specified tolerance for the AQ band, as per the table below;
- Note: The minus tolerance is only accepted following an estimated read

Lower AQ band (kWh)	Upper AQ band (kWh)	Tolerance
0	73,199	Greater than 73,199 kWh
73,200	731,999	+ or – 100% of Meter Point AQ
732,000	5,859,999	+ or – 100% of Meter Point AQ
5,860,000	29,299,999	+ or – 100% of Meter Point SOQ
29,300,000	57,599,999	+ or –100% of Meter Point SOQ

5.13.2 Shipper validation carried out for all sites where a periodic read is received;

- Tolerance check to ensure the consumption from the reading is within the specified tolerance for the AQ band, as per the table below;

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- Note: The minus tolerance is only accepted following an estimated read

Lower AQ Band (kWh)	Upper AQ band (kWh)	Tolerance
0	73,199	+ or – 300% of Meter Point AQ/365 x no. of days
73,200	731,999	+ or – 250% of Meter Point AQ/365 x no. of days
732,000	5,859,999	+ or – 200% of Meter Point AQ/365 x no. of days
5,860,000	29,299,999	+ or – 150% of Meter Point SOQ x no. of days
29,300,000	57,599,999	+ or – 100% of Meter Point SOQ x no. of days

5.13.3 GT validation carried out at read receipt of the Shipper readings, actual or estimated;

- For sites in Processes 1, 2 & 3, a completeness check to ensure that all readings expected have been received.
- For sites in Processes 1, 2 & 3, tolerance check at read receipt, reject if;
 - Read produces a negative consumption except after an estimated read.
 - Consumption is greater than or less than [x] x the Meter Point SOQ/AQ
- For all sites (Processes 1, 2, 3 & 4), a tolerance check based on the reconciliation energy calculated at read receipt against the AQ for the meter point, as per the table below;
 - Note: This check will only be required following a re-synch for processes 1, 2 & 3

Lower AQ band	Upper AQ band	Tolerance
0	73,199	Rec energy + or – Y% x AQ / read period
73,200	731,999	Rec energy + or – Y% x AQ / read period
732,000	5,859,999	Rec energy + or – Y% x AQ / read period
5,860,000	29,299,999	Rec energy + or – Y% x AQ / read period
29,300,000	57,599,999	Rec energy + or – Y% x AQ / read period

- Values to be determined following further analysis during Reconciliation discussions.
- Any reads that fail the GT tolerance check above will be rejected & a notification issued to the Shipper.

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- A rejected read can be re-submitted if the Shipper confirms that the read is correct.

Note: The GT validations are aimed at protecting the industry & allocation processes and to significantly reduce the potential number of 'Filter Failure' rejections.

5.14 Read Submission Incentives

5.14.1 Read Submission Incentives will continue to be required. This will be based on a % of the shipper's portfolio per day/calendar month and dependent on the site AQ / read frequency / market sector.

5.14.2 Option:

97.5% of sites where the reads are read and submitted daily

90% of sites where the AQ is greater than 73,200 kWh

70% of sites where the AQ is equal to or less than 73,200 kWh

5.15 Read Submission Deadline

5.15.1 A Read Submission Deadline will ensure readings are submitted within a set period after the meter read date. This does not include transfer reads.

5.15.2 Option:

5 days following the read date for all sites where daily reads are submitted daily (Process 1 & 2 sites)

35 days for all sites where a daily read is not submitted daily (Process 3 & 4 sites)

5.16 Must Reads

5.16.1 The Must Read requirement will apply where a 'Valid Meter Read' is not received for a consecutive period depending on the AQ / read frequency / market sector.

5.16.2 Option:

For sites with a read frequency of daily, weekly, fortnightly or monthly the Must Read will be triggered where a Valid Meter Read is not received for 4 consecutive months

For sites with a read frequency of 6 monthly or annually the Must Read will be triggered where a Valid Meter Read is not received for 24 consecutive months.

5.17 Check Read

5.17.1 Check Read obligations will continue to apply to detect any drift between the meter & AMR equipment. Check Read requirement will only apply to sites fitted with metering equipment that derive reads:

- Every 12 months for sites with an AQ greater than or equal to 29,300,000 kWh

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- Every 24 months for sites with an AQ less than 29,300,000 kWh and greater than or equal to 293,000 kWh
- Every 36 months for sites with an AQ less than 293,000 kWh

5.18 Treatment of AMR drift/resynchronisations

5.18.1 For sites in Processes 1 or 2;

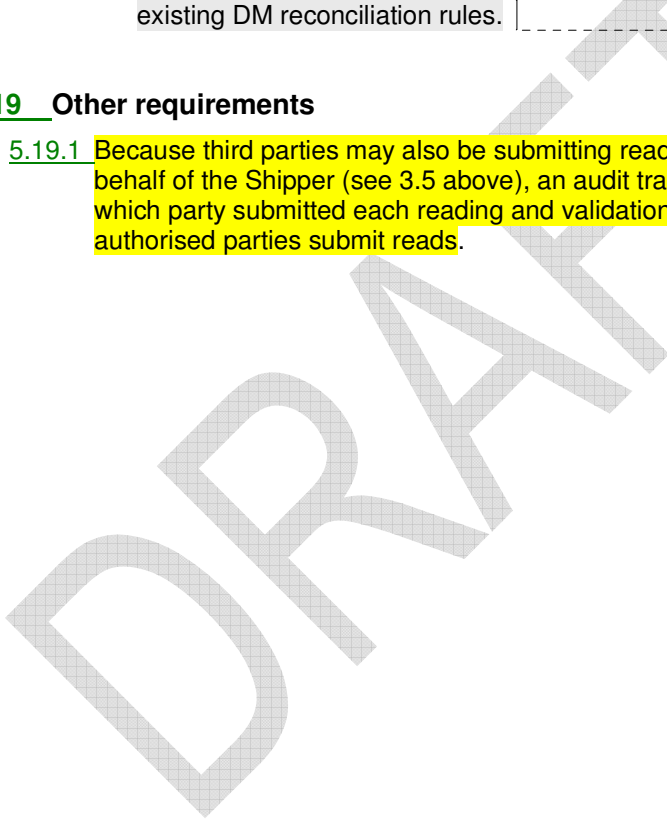
- A Re-Synch will be notified to Xoserve & recorded. The treatment of any drift between the read derived via the AMR device for these sites will be Pro-rata from the last resynchronisation. The existing DM Resynch rules will be applied for these calculations.
- Where a Shipper transfer occurs during the period of the re-synch the relevant charges will be applied to the incoming Shipper in line with existing DM reconciliation rules.

Deleted: <#>Note: Where a site with AMR equipment is transferred to the existing NDM regime the Check Read obligation will cease to apply.¶
 <#>Note: Check Read obligations may need to be re-visited if the current 2 year 'Meter Inspection' obligations are amended¶

Comment [m1]: To be discussed during Reconciliation topic. Section will be removed on new version of the document.

5.19 Other requirements

5.19.1 Because third parties may also be submitting readings for the meter on behalf of the Shipper (see 3.5 above), an audit trail is required to identify which party submitted each reading and validation to ensure only authorised parties submit reads.



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6. Non-Functional Business Requirements

7. Appendices

Transfer timelines for Change of Shipper & Change of Regime

(Add timeline presentation once agreed at workgroup)

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8. Glossary

Term / Acronym	Definition
Allocation	Determination of daily gas offtaken for all sites
DM Mandatory	As defined in UNC Section G1.5. Daily Read requirement applies where the Supply Point AQ is greater than 58,600,000 kWh.
DM Unbundling	Current obligations are on the GT to provide daily read equipment & daily reads to Shippers. 'Unbundling' is the term used for transferring the obligations from the GTs to the Shippers/Suppliers.
GFD	Gas Flow Day
GFD+5	Exit Close Out which is 5 calendar days after the Gas Flow Day. Also known as D+5.
Incoming Shipper	Newly appointed Shipper to take ownership for the Supply Point
NDM Allocation	Determination of daily gas offtaken for NDM sites by using standard profiles & factors
Nominations Scaling Adjustment	Value applied daily to each Shipper for the daily imbalance of forecast gas inputs to ensure that total gas nominations match forecast total gas demand.
NTS Sites	Those sites directly connected to the National Transmission System.
Outgoing Shipper	Shipper who has lost or about to lose ownership of the Supply Point
<u>Shipper Agreed Read</u>	<u>Transfer reading agreed by both the Outgoing and Incoming Shipper.</u>

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9. Document Control

Version History

Version	Status	Date	Author(s)	Summary of Changes
0.1	Initial Draft	20/04/2011	Xoserve	Merged content of the AMR Meter Reading Business Requirements document with the Interim Settlement Business Requirements document as agreed in the Settlement Workgroup on 13th April 2011.
<u>0.2</u>	<u>Draft</u>	<u>04/05/2011</u>	<u>Xoserve</u>	<u>Updated as agreed in the PNUNC (AMR) Workgroup on 04/05/2011</u>

Reviewers

Name	Version	Date
Workgroup attendees		

Approval

Name	Role	Date
Settlement Workgroup		
PN UNC		

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