

Modification 432 Project Nexus Gas Demand Estimation, Allocation, Settlement and Reconciliation Reform and ~~Modification 453 Project Nexus Demand Estimation~~, benefits case consultation report

A report provided to the Modification 432 Workgroup and 453 Workgroups for inclusion in the relevant Modification Report.

~~Fourth~~Second draft version October 2013

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1. Cost benefit case summary

~~Modification 453 provides the demand estimation rules essential for the implementation of Modification 432. For reasons at the time, the modifications were raised separately, but in full knowledge of their inter dependency, [In order to conduct a business case assessment without risk of double counting all the costs and benefits are assigned to Modification 432 with zero cost and zero benefit for Modification 453.]~~

From the information provided by Shippers, and following discussions with Ofgem on the treatment of some of the benefits presented, the Shipper benefits identified in this report equate to £2.9m per annum ongoing benefits which is £14.5m over 5 years. The 5 year period is considered to be a prudent view of the accrual of benefits following implementation of the modification planned for 1st October 2015.

Two Shippers have provided their financial response to Ofgem only, so other benefits may be identifiable by Ofgem. In addition, some benefits provided by Shippers have been excluded from this report as it has not been made clear how these would be achieved. It is likely there are further benefits available but it is not possible to quantify them.

Shippers provided many non-quantifiable benefits and these are included in this report.

The National Grid Transmission response (see Appendix 2) comments are not included in the response summary. Some matters raised are not for resolution within this cost benefit consultation report.

Other than Xoserve's high level cost estimate of £18m for modification 432, no other cost information is available from the consultation exercise.

Note: Xoserve has provided (in 2011 based upon the requirements as known at the time) a high level cost estimate of £20m for the suite of Nexus modifications – 432, 453, 434 – Project Nexus Retrospective Adjustment and 440 Project Nexus iGT Single Service Provision, for delivery as a single change. However, as requested by Ofgem, Xoserve has provided a “stand alone” cost for each modification for the purpose of completing the modification development. There are a number of economies of scale for the development / implementation of Nexus requirements as a single change over deliver as discreet individual changes. For example, each stand alone cost includes its project management costs. If the suite of functionality is to be delivered as one change the project management costs are more economical. The same principle is true for Shippers for example; they only need to incur one industry testing cost rather than several.

2. Introduction

This report has been prepared during the development of modification 432 for inclusion in the draft and final modification reports.

The purpose of the report is to document the responses to the cost benefit consultation and present the benefits case for modification 432.

A draft of this report was presented to the Nexus Workgroup on September 30, 2013 and review comments made at this meeting have been included within the report.

The consultation document is shown in Appendix 1.

3. Overview of the Modification 432

Modification 432 provides for three significant changes to the gas industry settlement activities, these are:

- Individual meter point reconciliation
- Periodic AQ calculation
- 4 classes of supply point

The current settlement regime that uses the Reconciliation by Difference (RbD) mechanism for smaller supply points will cease to exist and the gas usage for each supply meter point will be subject to individual reconciliation (this effectively returns the settlement regime to its original design in 1996).

The current process for recalculating AOs at a single point in the year will change so that AOs are re-calculated as reads are received (subject to the rules in the modification).

There are other changes to the industry settlement regime such as the use of gas nomination, allocation and reconciliation scaling processes for the allocation of gas. The full details of the changes can be found on the Joint Office website in the modification 432 documentation and the Nexus Workstream documentation.

<http://www.gasgovernance.co.uk/0432>

<http://www.gasgovernance.co.uk/nexus/2013>

4. Consultation approach and overview

The consultation document was prepared with the industry, including Ofgem, at the Project Nexus UNC (PNUNC) meetings.

The consultation document was issued to the industry through the Joint Office on 4th January 2013 with responses initially due back by mid-February although this was extended to 31st March to provide industry parties with more time to prepare and submit their response. In addition Shipper specific information on reconciliation variance was provided individually to each relevant Shipper.

The consultation posed 5 key questions:

1. Do you consider that more frequent AQ calculations will lead to better targeted allocation of energy on the Day? If so, can you identify and quantify the benefits this may achieve for your business.

2. Do you consider that the creation of the four settlement products will improve the granularity of transportation and energy charges? If so, can you identify and quantify the benefits this may achieve for your business.
3. Do you consider the four settlement products will enable the supplier business to offer improved services to end consumers? If so, can you identify and quantify the benefits this may achieve for your business.
4. Do you consider the periodic AQ process will enable organisations to operate a more efficient (flatter) resource profile over the year? If so, can you identify and quantify the benefits this may achieve for your business.
5. Do you believe that proposed Allocation Scaling Adjustment and Reconciliation Scaling Adjustment provide a more appropriate and transparent means of accounting for unidentified gas? If so, could you identify and quantify the benefits of this for your business.

The consultation invited respondents to consider two types of benefit:

- benefits that don't depend upon User behaviour e.g. periodic AQ calculation.
- benefits that are an enabler to usage of the settlement products and so do depend upon User behaviour / initiative.

The consultation invited respondents to consider opportunities in the "wholesale" and "retail" markets. Costs and benefits were to be categorised into "one-off" and "ongoing".

The consultation contained sections for each of the changes associated with the modification. These were:

- General
- Periodic AQ calculation
- Settlement products 1,2,3 and 4
- Allocation
- Settlement
- Reconciliation
- Future services

The consultation invited respondents to provide benefits and costs for each section and to provide any additional information that is relevant to Modification 432.

5. Consultation responses

The following organisations submitted a written response to the consultation:

Shipper organisations:

British Gas
Dong
EDF Energy*
Eon*
Npower
Scottish and Southern Energy

Scottish Power
Utilita

Gas Transporters
National Grid Gas Transmission

*responses provided directly to Ofgem, any financial information provided by these organisations has not been provided to the authors of this report nor included in this report.

In addition Waters Wye Ltd provided a report published with the 10th April 2013 432 Workgroup meeting documents on the Joint Office website.. This report is in Appendix 3.

All responses provided by Shippers directly to Xoserve have been forwarded to Ofgem to ensure Ofgem has a full view of the industry responses are able to verify this report.

6. Consultation response summary

All respondents were supportive of the principles of modification 432. More specific response details are summarised below.

6.1 General comments

Shipper respondents considered the move to individual meter point reconciliation and periodic AQ calculation was necessary to take advantage of the read services to be available through smart and AMR meters. The services to be provided by modification 432 was consistent with the general industry requirements for greater granularity of settlement data which would then enable the development of improved tariff products to customers. In addition it was considered that this greater granularity would enable Shippers to track costs and trading positions more closely.

Shippers considered that as this aspect of the market it yet to be developed they could not provide any benefit details but all respondents strongly considered there to be significant benefits to them and their customers.

A number of Shippers considered a performance assurance framework is required to ensure the industry delivers on its obligations.

Explanation of the performance assurance framework reference above. The cost benefit consultation spanned the period of the formation of the Performance Assurance Workgroup (see Joint Office website under Network Code, Workgroups. This workgroup was established [in January 2013](#) (and at the time of this report is still established) to consider a Performance Assurance Framework (PAF) for the gas industry to [ensure settlement accuracy across the gas market](#) [incentivise good performance in the Shipper activities that impact the industry e.g. submission of timely meter readings.](#) In their responses to the 432 cost benefit consultation a number of Shippers, whilst welcoming the industry requirements, wish to see the PAF developed in such a way that incentivises [sound-robust](#) industry performance [to ensure the delivery of the expected Project Nexus benefits.](#) ~~against the industry requirement developed under Modification 432.~~

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6.2 Periodic AQ calculation

Shipper respondents considered that with AQs tracking more closely to actual consumption there were benefits associated with:

- improved short and long terms gas purchasing activities
- a reduction in energy balancing risk

Shipper respondents considered that 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.

Shipper respondents considered that there were operational benefits to smoothing out the AQ process over the year rather than the summer peak of work.

One respondent considered that the periodic AQ service would provide greater assurance / integrity of the AQ regime as a whole as the AQ. The current AQ amendment process will cease to exist and so the AQ process will only use reads held on UK Link systems.

6.3 Settlement Products

6.3.1 Settlement Products

Shipper respondents considered the 4 settlement products (with the associated benefits of smart and AMR meters) would enable them to create and offer new services for consumers / consumer groups.

Shipper respondents considered individual meter point reconciliation will provide greater transparency of costs for each supply point. They also considered that this is a significant benefit over the current settlement mechanism of AQ values.

Shipper respondents considered the removal of the USRV and “Mod 640” processes would reduce operational costs.

6.3.2 Unidentified Gas

A number of Shipper respondents considered that the 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. The current industry costs associated with the AUGÉ would no longer be incurred.

Update: following Modification 432 Workgroup meeting 22nd October 2013. The Workgroup concluded that a role for an expert (similar to the AUGÉ) may be required to better target the allocation of unidentified energy by Class (1,2,3 or 4) and by supply point type.

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6.4 Allocation

A number of Shipper respondents considered that with the availability of readings the demand estimation models could be improved.

6.5 Future Services delivered through UK Link system

Shipper respondents considered there would be benefits from a future UK Link system that can accommodate change more quickly and efficiently.

6.6 National Grid Gas Transmission response

The full National Grid Gas Transmission response is in Appendix 2

At a high level their response raises the following topics / matters

- commitment to support the industry in its developments
- recognition of the benefit areas to Shippers
- impacts to the Gemini system and the need for more detailed cost assessment for these changes
- recognition of the need to balance Shipper demand and system capacity
- requirement for all costs associated with implementation to be provided to the industry
- the need for a statement from Ofgem on the funding of gas settlement reform costs
- reference to Ofgem's funding, governance and ownership of Xoserve and its timing
- reference to the congested change programme for Q4 2015 with UK and European Code developments

6.7 Cost areas

6.7.1 Xoserve costs

During the development of the industry requirements, in December 2012, Xoserve provided a high level estimate of £18m for the 432 functionality. This was based upon the BRDs prepared at that point in time. See:

<http://www.gasgovernance.co.uk/sites/default/files/pnunc%204%20dec%20cost%20breakdown.pdf>

6.7.2 Shipper costs

Some Shipper respondents provided information on areas where they would incur costs. These are all associated with their systems development changes required to operate the new functionality. There was limited information provided and it has not been possible to assess the industry costs for the implementation of this modification.

7. Additional cost information identified at the Modification 432 workgroup 15th October 2013

Modification 434 Project Nexus Retrospective Updates, workgroup considered the implications of the implementation of Modification 432 Project Nexus Gas Demand Estimation, Allocation,

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Settlement and Reconciliation Reform with regards to the potential increase in consumption adjustments.

A number of consumption adjustments are raised at present for the larger supply point market to correct consumption created by the submission of incorrect reads or to correct historic consumption as a result of the late /none update of the meter asset record.

It was considered by the Workgroup 434 that with the planned replacement of all “traditional” meters with smart meters there would, on occasions, be a late or incorrect update of asset details. Each occasion may give rise to a retrospective update, which in current arrangements would be treated as a consumption adjustment, but which under modification 434 would be treated as a retrospective update. It was considered that if the number of retrospective updates could be determined this could demonstrate a potential risk for modification 432 and would create the manual costs (shipper and Xoserve) associated of raising and processing consumption adjustment queries.

Xoserve has assessed the number of consumption adjustments presently processed for the larger supply point market. The results are shown below:

<u>Contact Type</u>	<u>Average Annual Volume</u>
<u>Request for Adjustment (RFA)</u>	<u>550</u>
<u>Consumption Dispute Query (CDQ)</u>	<u>330</u>
<u>Filter Failure Consumption Adjustments</u>	<u>7,000</u>
<u>Total</u>	<u>7,880</u>

The main scenarios that factor into the generation of Consumption Adjustments are:

Meter Asset Incorrect
Late Meter Attached
Negative Volume
Through the Zero's Incorrect

The figures above represent a consumption adjustment rate of 2.07% of the population of 380,000 larger supply points. If extrapolated to 23 million meter points this would equate to approx 475,000 consumption adjustment requests per annum. However, new read validation functionality may stop the majority of the read submissions that lead to the requirement for a consumption adjustment occurring.

It may not be considered that this data will be reflective of the future volume of meter exchanges. For this assessment the starting position is the exchange of 23 million meters over the next 5 years. Currently, meter asset notifications (RGMA ONJOB records) are operating at a 94% success rate, leaving 6% rejections, requiring re-work and re-submission. This figure suggests that 1,380,000 meter asset notifications would reject at their first attempt. If it was not possible to successfully re-submit the asset notification before any subsequent action is recorded on UK Link system e.g. the submission and acceptance of a meter reading, a change of supplier event, then a consumption adjustment would be required. However, it cannot be assumed that the meter asset

notification rejection rate will remain at 6%, it may go up or down and it cannot be assessed how many subsequent actions (meter read or change of supplier event) may occur before the asset can be updated.

It is not possible to determine a future figure for consumption adjustments that would require processing if modification 432 were implemented. But it can be reasonably assumed that with the introduction of individual meter point reconciliation and the volume of future meter exchanges, there is a risk of increase in consumption adjustments.

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7.8. Cost benefit assessment

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The cost benefit assessment was a more difficult exercise for respondents. A number of respondents suggested significant benefits (tens of millions) from the introduction of individual meter point reconciliation although they did not explain how these benefits would actually be achieved. There is also a consideration that whilst one organisation may see some benefit in a reduction in energy allocated to them, the energy must be allocated somewhere, so there is no industry-wide benefit. Following discussions with Ofgem it was decided to exclude these benefits from this report.

Some Shippers commented and / or provided an assessment of the benefit of the reduced risk of future gas purchases. It is not reasonable to attempt to extrapolate these benefits as it cannot be demonstrated these apply equally to all Shippers. Using the information provided, for the purpose of this report an industry-wide value of £2m per annum has been derived for this activity.

Enough Shipper respondents provided information on operational savings to enable a “simple” extrapolation to determine an industry-wide benefit. Using the information provided, for the purpose of this report, an industry-wide value of £900,000 per annum has been derived for operational savings. This has been determined by assigning a benefit of £100,000 per annum to each of the “top six” organisations and £20,000 per annum for to 15 of the medium sized Shippers.

This equates to benefits of £2.9m pa or £14.5m over 5 years.

Appendix 1 Original consultation request

Settlement Reform cost benefit assessment

This is an information gathering exercise for Modification 432 Project Nexus Gas Settlement Reform.

Industry participants are requested to provide responses to any of:

Xoserve at commercial.enquiries@xoserve.com

Ofgem at smartermarkets@ofgem.gov.uk

Responses are required by 15th February 2013

In order to support the Project Nexus Settlement Reform Modification <http://www.gasgovernance.co.uk/0432> this document has been prepared to enable industry participants to provide information in a common format to enable this to be aggregated for inclusion in the modification report.

Industry participants may have further areas of cost and benefits not covered in this document and these can be provided during the development of the modification report.

The table below outlines the potential benefit areas for the industry requirements of Settlement Reform, developed at the Project Nexus UNC workgroup. Respondents are welcome to provide information on any other benefit areas they can identify.

Some of the benefits may only be achievable from the use of reads from Smart and AMR meters. It should also be noted that the increased read frequency provided by Smart and AMR meters may have less benefit for the “wholesale” market without the associated Settlement Reform products.

Questions to consider:

6. Do you consider that more frequent AQ calculations will lead to better targeted allocation of energy on the Day? If so, can you identify and quantify the benefits this may achieve for your business.

7. Do you consider that the creation of the four settlement products will improve the granularity of transportation and energy charges? If so, can you identify and quantify the benefits this may achieve for your business.
8. Do you consider the four settlement products will enable the supplier business to offer improved services to end consumers? If so, can you identify and quantify the benefits this may achieve for your business.
9. Do you consider the periodic AQ process will enable organisations to operate a more efficient (flatter) resource profile over the year? If so, can you identify and quantify the benefits this may achieve for your business.
10. Do you believe that proposed Allocation Scaling Adjustment and Reconciliation Scaling Adjustment provide a more appropriate and transparent means of accounting for unidentified gas? If so, could you identify and quantify the benefits of this for your business.

Respondents may consider two types of benefit:

- benefits that don't depend upon user behaviour e.g. periodic AQ calculation.
- benefits that are an enabler to usage of the settlement products and so do depend upon User behaviour / initiative.

The business requirements documents prepared at the Project Nexus UNC workgroup can be found at:

<http://www.gasgovernance.co.uk/nexus/2012>

The following table attempts to consolidate the views expressed through PN UNC workgroup discussions. The table should be seen as a guide and not an exhaustive list of benefit areas, respondents are welcome to provide additional cost and benefit information.

Settlement Reform functionality	Impact	“Wholesale” market opportunity	“Retail” market opportunity	One-off benefit	Annual benefit
General	<p>Provides a framework whereby Shippers would be able to better understand ‘site specific’ costs through increased data granularity</p> <p>Provides an opportunity to maximise the benefits of SMART/AMR technology through the ability to submit more frequent and accurate data to Transporters</p> <p>Facilitates full availability of choice as to which type of product Shippers wish to use. Any Supply Point can be DM or NDM (subject to UNC rules for ‘mandatory’ DM)</p> <p>Systematises activities which are currently manually administered e.g Unique sites leading to less ‘off line’ interaction with Shippers Supply Point Register – availability of consumption data for period prior to ownership</p>	<p>More efficient administration for all parties</p>	<p>Ability for Suppliers to accurately calculate and understand Supply Point specific costs particularly in the Smaller Supply Point market</p> <p>Enables new marketing opportunities to be identified together with ability to differentiate these</p> <p>Enables Suppliers to meet their customers precise requirements across all market sectors</p>		
Periodic AQ	Improved allocation leading to	Improved data to			

Settlement Reform functionality	Impact	“Wholesale” market opportunity	“Retail” market opportunity	One-off benefit	Annual benefit
calculation	reduced reconciliation variance*	inform short and long term gas purchasing			
	Improved read validation process leading to the ability to use services with no exception processes required. E.g. the current AQ process has an AQ amendment process, the proposed AQ process (because of the greater frequency of AQ calculation and expected better read quality) does not require this	Streamlined processes with minimal exception management processes.			
	Facilitates greater level of Shipper confidence in the integrity and accuracy of the AQ arrangements through minimising opportunities for manual intervention				
Product 1	Daily nomination, daily balancing		New products for consumers		
	Facilitates ability for reading arrangements for ‘mandatory’ daily read sites to be ‘unbundled’ at a future point	Opportunities for Shippers to identify new products for large end users			
Product 2	Daily nomination, daily balancing		New products for consumers		
	Enables any Supply Point to be subjected to Daily Read arrangements				

Settlement Reform functionality	Impact	“Wholesale” market opportunity	“Retail” market opportunity	One-off benefit	Annual benefit
Product 3	Daily reconciliation		New products for consumers		
Product 4	Meter point reconciliation		Greater granularity of costs.		
	All Supply Meter Points would be individually reconciled enabling full transparency of energy allocation				
All products	<p>The volume of unidentified gas will be more visible, likely to result in greater initiatives to resolve this.</p> <p>Removes the need for intervention in the allocation of unidentified gas through an AUGE</p>	<p>Over time will reduce the costs of unidentified gas. In the 2011/12 AUGS the total volume of unidentified gas was provided as 6033 GWh**</p> <p>Reduction in costs</p>	Reduced unidentified gas costs to be passed through.		
Allocation	Opportunity for improved demand estimation methodologies leading to more accurate allocation of energy				
Settlement	<p>Greater capacity for significantly more Meter Readings to be passed to the Transporter leading to optimisation of Annual Quantity calculation</p> <p>Up front validation of Meter Readings eliminates USRVs and SRVs thereby facilitating certainty of outcome at an</p>				

Settlement Reform functionality	Impact	“Wholesale” market opportunity	“Retail” market opportunity	One-off benefit	Annual benefit
	early stage in the process				
Reconciliation	Removes uncertainties arising from aggregate reconciliation in the Smaller Supply Point market. Enables ‘genuine’ reconciliation values to be identified				
	Eliminates need for RbD audit and verification processes				
Future services	The replacement of UK Link will result in a new system with a greater flexibility and capacity for future change	Potential for new products and services.	Potential for new products and services.		

* Xoserve is working on the provision of information for each Shipper detailing their reconciliation variance for LSP sites. This will enable each Shipper to assess what benefit may be available.

** <http://www.gasgovernance.co.uk/sites/default/files/AUGS%202011%20Version%204.pdf> page 65

Cost areas

Industry participants are requested to provide an assessment of the costs of implementing the Project Nexus Gas Settlement Reform functionality.

Appendix 2 National Grid Gas Transmission response in full

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15th February 2013

Modification 0432 Project Nexus – Gas Settlement Reform **- Cost Benefit Assessment**

Dear Andy,

Thank you for your invitation to participate in the Cost Benefit Assessment for the above Modification Proposal. National Grid NTS is committed to supporting the industry with its aims of improving the efficiency and competitiveness of the Non-Daily Metered market via Gas Settlement Reform and of progressing the replacement of the UK-Link suite of IS systems.

As requested in your covering letter for the Cost Benefit Assessment of 4th January 2013, this response will summarise National Grid NTS' views on benefits, costs and concerns related to Modification Proposal 0432.

1.0 Benefits

- 1.1 National Grid NTS expects that it will not receive any material benefit from this Modification as we consider that benefits associated with this Modification Proposal will be realised in the Shipper and Gas Distribution Network communities.
- 1.2 From listening to industry debate National Grid NTS understands that the proposed changes have the potential to deliver a range of benefits to Shippers in respect of;
- Providing the opportunity to maximise the benefits of the Smart/AMR technology through the submission of more frequent and accurate reads.
 - Delivering increased data granularity and thus enhanced clarity of "site specific" costs.
 - Improved accuracy in the allocation of energy and reduced reconciliation variance through the periodic calculation of Annual Quantity, thus reducing costs for Users by enabling energy to be purchased that more closely matches their true requirements.

- Following the full roll-out of Smart Meters, the removal of uncertainties arising from aggregate reconciliation in the Smaller Supply Point market; with individual meter point reconciliation enabling full transparency of energy allocation.
- Increasing the predictability of costs, thus reducing the risk and uncertainty faced by users; consequently reducing risk premiums and reducing barriers to entry.
- Providing a more appropriate and transparent method for the allocation of unidentified gas.

1.3 National Grid NTS understands that the value of benefits realised is dependent on the Shippers' behaviour and initiative, with regard to the take up and implementation of the four available products. We note that no indication has been provided by the Shipper community as to their planned level of take up of the different products.

2.0 Costs

National Grid NTS has concerns regarding the estimated costs provided to the industry which are under consideration in this Cost Benefit Assessment.

2.1 National Grid NTS has a concern that the estimated cost provided by Xoserve, for development of the UK-Link systems to deliver the requirements of this Modification, specifically excluded the cost of required changes to the Gemini suite of systems, which would be necessary in order for the two systems to continue to operate together and deliver the services requested by Shippers and DNOs.

Due to an increase in the original scope of the UK-Link Replacement Programme, some material elements of the proposed changes do now relate to functionality within the Gemini suite of systems.

National Grid NTS considers that the additional changes required to the Gemini systems require funding if they are to be completed.

We also believe that an estimate for the cost for the required changes to the Gemini system should be provided to the industry, to facilitate due consideration of all costs associated with this Modification Proposal. Without such costs being communicated the consultation process would be incomplete and any responses therefore invalid.

2.2 The aspiration of Shippers is for no limits or system constraints on the daily volume of reads that could be submitted. Xoserve estimated costs have assumed a level of potential volumes for each product. National Grid NTS is concerned that a more accurate view of volumes, incorporating the full range of Shipper aspirations is required to provide accurate system design costs.

Without such information there is an acute risk that any system functionality built would either under estimate the customers' requirement leading to customer frustration and dissatisfaction or to claims over "gold-plating". Neither situation is desirable and both would lead to the creation of avoidable costs.

3.0 Concerns

National Grid NTS remains committed to supporting the industry in the economic and efficient delivery of Gas Settlement Reform. We therefore believe that the following additional areas of concern should be fully considered during this Cost Benefit Assessment.

- 3.1 In order to ensure this Cost Benefit Assessment is completed with the appropriate level of rigor, full and detailed accounts of all costs associated with the implementation of Gas Settlement Reform should be provided to the industry.
- 3.2 The timely provision of an explicit statement from Ofgem on the funding of Gas Settlement Reform is required to provide clarity and transparency to the industry during its consideration of this Modification Proposal.
- 3.3. National Grid NTS is concerned that full account must be taken of the potential impact of Ofgem's Funding, Governance and Ownership (FGO) review of Xoserve. The FGO review may well result in a root and branch restructuring of arrangements for Xoserve. A decision on the revised FGO arrangements is not expected until Q3 2013. This review has significant potential to cause delay and confusion in the delivery and funding of the changes required to implement Gas Settlement Reform.
- 3.4 National Grid NTS wishes to highlight a risk to the planned delivery of Gas Settlement Reform functionality by mid 2015, caused by other regulatory and statutory change drivers.

With a range of UK and European Code developments, the industry is already progressing changes which will require a substantial UK-Link and Gemini change programme between now and 2015.

Full account of potential resource and system constraints must be taken by the industry, to produce a credible road map for implementation of the Gas Settlement Reform. This road map must appropriately prioritise the implementation of Gas Settlement Reform system changes, alongside all other regulatory change Requirements. It must also safeguard the enduring stability and availability of systems, to ensure that all users' ongoing needs are met.

Furthermore these concurrent regulatory change drivers have the potential to necessitate amendments to this Modification Proposal. The specification of the system and process changes required to implement Gas Settlement Reform, must take full account of these regulatory change drivers, to remove the potential for costly reworks.

For example; the EU Gas Day change will move the start of Gas Day from 06:00 to 05:00. Does this mean that the meter read submission deadline for Product 1 should be moved from 10:00 am on GFD+1 to 09:00 am on GFD+1?

National Grid NTS is happy for all parts of this response to be put in the public domain.

We look forward to receiving Xoserve's Consultation Report summarising the points raised in this and the other industry participants' responses.

Please let me know if you require any further information to enable preparation of the Gas Settlement Reform Cost Benefit Consultation Report.

Yours sincerely
Julie Varney

Appendix 3 Waters Wye Report



Impact of UNC Modification 0432 (Project Nexus) on GB gas market

A report for I&C Shippers & Suppliers (ICoSS)

Prepared by Waters Wye Associates Ltd

Version 1.0
1st March 2013

Revision History		
Version	Date	Revision Description
1.0	1 st March 2013	Creation of documents

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Field Code Changed
Field Code Changed
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1. Background

Project Nexus is the collective term given to the project to replace central industry systems. To take advantage of the lower implementations costs this technology replacement has afforded, a series of market improvements have been identified by shippers. The foremost of these are reforms to the current settlement processes used by the industry. These changes are collectively set out in UNC Modification 0432: Project Nexus – gas settlement reform.

New processes

The most significant of these improvements is the replacement of current settlement classifications of DM, LSP NDM & SSP NDM with four new settlement products as summarised below:

<i>Process Description</i>	<i>Basis of energy Allocation</i>	<i>Basis of Energy Balancing</i>	<i>Shipper Read Submission</i>	<i>Missing read arrangements for energy allocation</i>
Product 1: Daily Metered Time Critical Readings	Daily Read	Daily Read	Daily by 10 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

Source: Xoserve

The movement to these new products has three main impacts on the settlement framework:

- Significant increase in the number of daily settled sites, coupled with removal of restrictions on what sites can be daily settled.

- All sites, as a minimum, will be individually settled and reconciled, i.e. treated as current LSP NDM.
- The RbD process will no longer exist and so Unidentified Gas will be allocated evenly on a portfolio basis.

In addition it is proposed to move from the current static AQ calculation process and instead re-calculate AQ for each site on a monthly basis if sufficient meter readings exist.

Cost Benefit Analysis

It is widely expected that this new settlement framework will bring significant improvements in the operation and efficiency of the market, not least a significant reduction in the costs that shippers incur through inaccurate allocation up to and on the Gas Day. This report attempts to quantify some of those benefits to enable Ofgem to weigh up the value to the customer.

2. Data Analysis

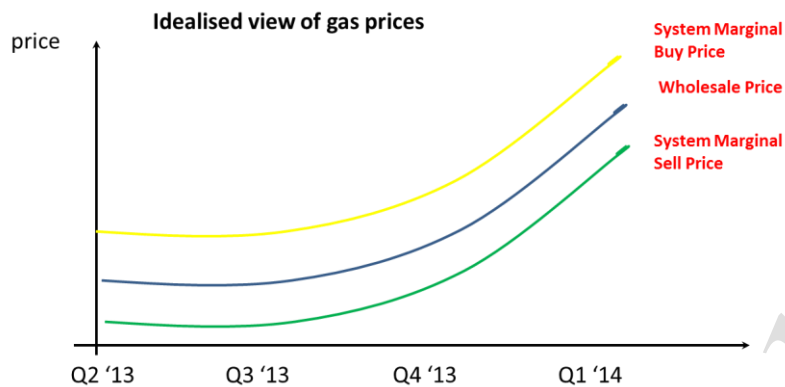
There is general agreement that the new settlement process will improve the efficiency of the market. The total identified costs of the market improvements requested by shipper has an estimated total cost of £20m, approximately an additional £1 on every household bill. This report sets out the benefits that these changes will bring by reducing the volatility between initial allocation for a site and its final reconciled position.

Scope

This report looks at the impact that allocation adjustment has on shippers, focussing on their wholesale gas costs. A series of other factors (such as time value of money) are not examined.

System Price of Gas

The underlying principle behind the wholesale allocation process is to ensure that shippers seek to purchase the gas that their suppliers' customers will use. This should mean the System Marginal Buy Price and the System Marginal Sell Price should always be higher and lower respectively of wholesale market prices. An idealised representation of this process is shown below:



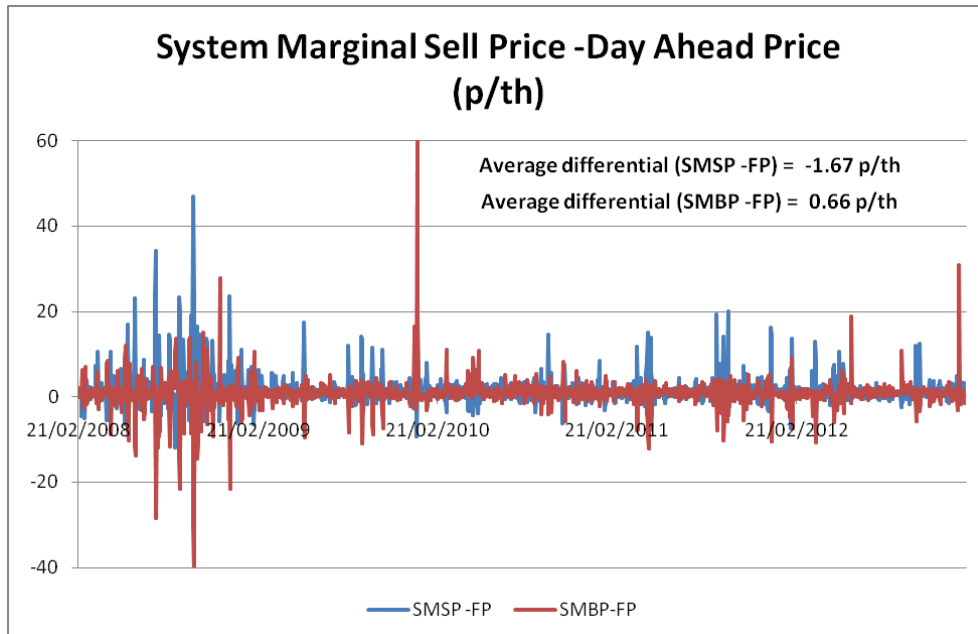
Note: This does not reflect actual market prices

Reflecting this underlying principle, the System Marginal Sell Price (SMSP) is defined as the lesser of the lowest Balancing Action Offer Price on a Day or System Average Price¹ - 0.0324 p/kWh. System Marginal Buy Price (SMBP) is the higher of the highest Balancing Action Offer Price on a Day or SAP + 0.0287 p/kWh.

This unpredictable price divergence has financial implications for shipper as they will be either be charged SMBP or be paid the uneconomical SMSP for any imbalance between what they were allocated and the gas they put into the system.

In reality the system marginal prices not always align with market prices. As can be seen below historically² the System Marginal Buy Price can be lower than the market price and the System Marginal Sell Price can be higher than the market price:

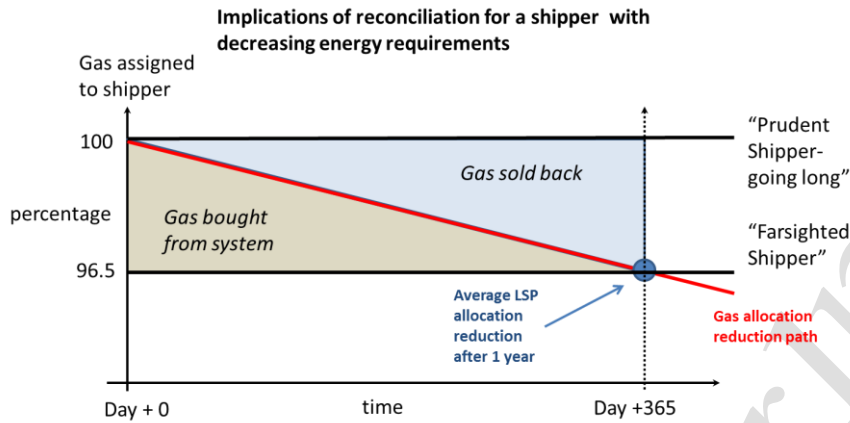
²Using System Prices February 2008 – January 2013 and Platts day-ahead price for the same period



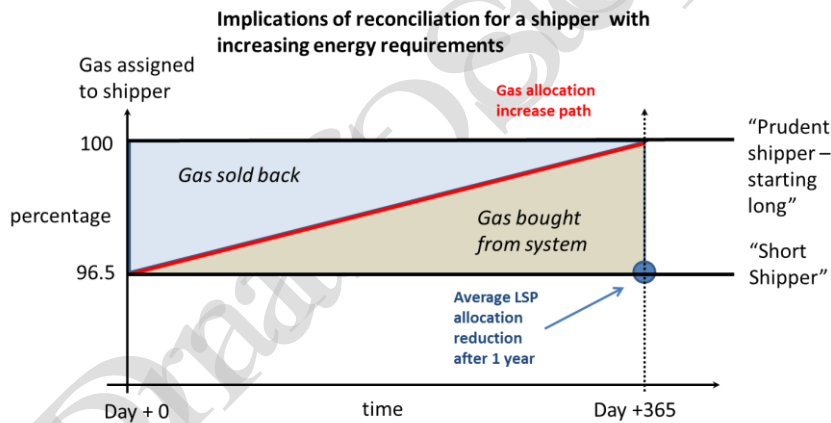
Reconciliation Process

In Project Nexus all sites will be individually reconciled and so be effectively treated as LSP NDM sites are currently. For LSP NDM customers a shipper will be assigned an amount of gas using an estimation process based on the site's AQ. As meter reads are received then the site's consumption will be adjusted (reconciled) to allocate to the shipper the correct gas use for that site. This means that over time the view of the site's consumption will shift. The aggregate impact of these changes will mean that a shipper will potentially be liable for SMBP or eligible to receive SMSP as their total allocation shifts towards the final volume. It has been communicated by Xoserve that generally their energy allocated to LSP NDM sites reduces as the sites are reconciled and so there is a downward trend.

For a shipper whose total volume requirements there can either meet of their gas requirements on the day and then be reimbursed for the gas their customers did not use over a period of time (termed here "Prudent Shipper –going long"), or they attempt to determine their customer's true gas consumption. In this latter scenario the shipper pays for their short position at SMBP, but this is gradually returned to that shipper as their position is corrected over time, so being at zero position if they are accurate in their estimation (termed "Farsighted Shipper").



The other scenario is that the shipper experiences an increase in gas requirements. Again the two possible approaches are either to buy the gas allocated on the day and so be exposed to buying gas at SMBP as the allocation increases (“Short Shipper”), or attempt to determine final demand and purchase gas in the market to meet it (“Prudent Shipper – starting long”)



The impact of these possible scenarios, ranked in descending order of unit cost are:

	Differential	Average Cost (p/th) ³
Short Shipper	SMBP	50.36
Prudent Shipper – going long	Market Price -SMSP	1.67
Prudent Shipper – starting long		
Farsighted Shipper	SMBP	50.36

³ Using System Prices February 2008 – January 2013 and Platts day-ahead price for the same period

The last scenario requires the shipper to predict its final gas use on any given day and so demand a level of forecasting (or luck) that is very difficult to achieve in practice with NDM customers and be effectively discounted. In reality a shipper will either ultimately end up short or long depending on the accuracy of their predictions and the position initially taken. Owing to the fact that the SMBP price is penal, the incentive would be for shippers to go long as the cost is much lower and so most shippers would follow the prudent shipper route to some degree, through probably not for their whole portfolio.

3. Conclusions

At present any energy adjustment caused by reconciliations flows into or out of the SSP market and so there would be a corresponding increase into this market. This will not be the case when Project Nexus is implemented, but as any reductions in gas flow would instead go into Unidentified Gas and smeared across the market this will have the same net impact as RbD. Therefore for a net reduction for a shipper will push up allocated for all other shippers.

Extending the values highlighted above to the whole NDM market then the price impact of a 1% market change would be:

	Differential	Average Cost (p/th) ⁴	Average Cost (p/kWh)	Impact per % drop (NDM market) ⁵ p.a.
Short Shipper	SMBP	50.36	1.719	£85.9m
Prudent Shipper	Market Price - SMSP	1.67	0.057	£2.85m

It has been indicated that the approximate reduction in allocation between July 2011 and July 2012 for the whole LSP NDM sector was approximately 3.5%. This reduction would result in a cost to the market of £9.96m per year, assuming that all shippers were long and so able to absorb such a cost at a substantially lower rate than SMBP. If some shippers were instead short then it would instead be a substantially higher cost for the market as a whole.

Assuming that a Project Nexus has a lifespan of 10 years then the new settlement changes would have to achieve a reduction in volatility 0.35% to recover its costs.

⁴ Using System Prices February 2008 – January 2013 and Platts day-ahead price for the same period

⁵ Using an NDM market value of 500 TWh a year,